

Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction

Table 14A-1 displays estimates of the temporary (and short-term) and permanent impacts to individual types of crops as a result of construction of the water conveyance facility under each alternative. Analysis relating to the economic effects on agriculture in the Plan Area and Areas of Additional Analysis in Chapter 16, *Socioeconomics*, relies on individual crop data. Because crop selection varies on a season-to-season and year-to-year basis, these data should be considered estimates based on an individual time period.

1 **Table 14A-1. Estimated Crop Acreage Lost as a Result of Construction of Water Conveyance Facilities, by Alternative**

Category and Crop Type	Alternative														
	1A	1B	1C	2A ^a	2B ^a	2C	3	4	5	6A	6B	6C	7	8	9
Permanent Surface Impact	5,587.6	19,532.0	13,743.1	5,603.0	19,532.0	13,743.1	5,416.0	4,765.3	5,343.8	5,587.6	19,532.0	13,743.1	5,455.0	5,455.0	3,332.7
Alfalfa and Alfalfa Mixtures	960.5	5,062.2	1,942.1	950.4	5,050.0	1,942.1	948.9	882.8	948.9	960.5	5,062.2	1,942.1	960.5	960.5	791.2
Apples		30.8	18.9		30.8	18.9					30.8	18.9			
Asparagus	337.7	961.7		337.7	961.7		337.7	7.7	337.7	337.7	961.7		337.7	337.7	539.3
Beans (dry)			6.4			6.4						6.4			
Beans Green	1.0	1.5		1.0	1.5		1.0	2.7	1.4	1.0	1.5				
Bush Berries			0.8			0.8						0.8			
Cabbage		17.1			17.1						17.1				
Cherries	1.2	10.7		1.2	10.7		1.2	2.0	1.2	1.2	10.7		1.2	1.2	
Clover			6.4			6.4						6.4			
Corn	1,139.8	4,037.4	1,776.0	1,145.8	4,044.2	1,776.0	1,139.8	955.8	1,139.9	1,139.8	4,037.4	1,776.0	1,139.1	1,139.1	558.5
Cucurbits		53.9	371.9	0.8	53.9	371.9		3.1			53.9	371.9			6.3
Dairies								1.4							
Eucalyptus		1.6			1.6						1.6				
Farmstead with residence	19.9	52.4	65.5	22.0	54.4	65.5	19.6	12.6	19.7	19.9	52.4	65.5	14.8	14.8	4.9
Farmstead without residence	16.6	29.8	14.2	17.2	30.4	14.2	16.0	11.3	16.0	16.6	29.8	14.2	15.4	15.4	5.6
Flowers/Nursery/Christmas		1.6			1.6						1.6				
Grain sorghum															
Grapefruit	0.4	0.4		0.4	0.4		0.4		0.4	0.4	0.4				
Idle	85.7	256.1	281.7	85.7	256.1	281.7	85.7	77.6	85.7	85.7	256.1	281.7	85.7	85.7	31.3
Kiwis															
Livestock Feed Lot		0.1	4.3		0.1	4.3					0.1	4.3			
Misc Deciduous			3.7			3.7						3.7			0.0
Misc Grain and Hay			175.4			175.4		102.2				175.4			
Misc Grasses	10.2		8.9	10.2		8.9	10.2		10.2	10.2		8.9	10.2	10.2	
Miscellaneous semi-ag	142.6	878.7	536.9	144.4	876.0	536.9	138.1	144.6	137.8	142.6	878.7	536.9	140.6	140.6	105.3
Mixed (four or more)	6.1	6.1	1.1	6.1	6.1	1.1	6.1	5.7	0.1	6.1	6.1	1.1	6.1	6.1	
Mixed Pasture	42.4	62.5	522.6	5.9	27.8	522.6	5.9	105.0	5.9	42.4	62.5	522.6	5.9	5.9	
Native Pasture	5.4	5.4	103.9	1.0		103.9	1.0	121.2	1.0	5.4	5.4	103.9	1.0	1.0	5.7
Native Vegetation	899.2	1,291.5	1,304.0	938.2	1,331.0	1,304.0	863.6	1,114.8	846.6	899.2	1,291.5	1,304.0	872.2	872.2	964.0
Not Surveyed			12.5			12.5						12.5			
Olives	0.8	31.9	8.4	0.3	31.3	8.4	0.3		0.3	0.8	31.9	8.4	0.3	0.3	
Onions and Garlic		80.4	5.3		80.4	5.3					80.4	5.3			
Peaches and Nectarines		36.0			36.0			4.1			36.0				
Pears	137.7	222.7	111.3	152.5	234.2	111.3	111.9	109.0	80.7	137.7	222.7	111.3	129.3	129.3	23.1
Peppers		157.9			157.9						157.9				
Potatoes		234.1			234.1						234.1				
Poultry Farms															
Rice		111.7			111.7						111.7				
Safflower	57.4	290.7	1,210.8	51.8	284.0	1,210.8	51.8	113.3	51.8	57.4	290.7	1,210.8	33.8	33.8	1.2
Strawberries			3.3			3.3						3.3			
Sudan	23.2	25.6	351.0	23.2	25.6	351.0	23.2	80.3	23.2	23.2	25.6	351.0	23.2	23.2	
Tomatoes (Processing)	89.2	1,317.1	641.3	91.5	1,319.4	641.3	89.2	384.2	86.1	89.2	1,317.1	641.3	89.1	89.1	29.3
Turf Farms		119.6	180.4		119.6	180.4					119.6	180.4			

Category and Crop Type	Alternative														
	1A	1B	1C	2A ^a	2B ^a	2C	3	4	5	6A	6B	6C	7	8	9
Unknown Deciduous Fruits and Nuts	13.9	79.5		13.0	78.9		2.6	29.0	2.6	13.9	79.5		13.8	13.8	
Unknown Field	62.1	84.8	173.9	62.1	84.8	173.9	62.1	19.8	62.1	62.1	84.8	173.9	62.1	62.1	
Unknown Grain and Hay	356.0	1,505.8	824.3	356.3	1,509.6	824.3	334.0	202.5	325.3	356.0	1,505.8	824.3	351.4	351.4	12.3
Unknown Pasture			9.8			9.8						9.8			
Unknown Rice	0.0			0.0			0.0	128.6	0.0	0.0			0.0	0.0	
Unknown Truck Nursery and Berry		34.7	3.5		34.7	3.5					34.7	3.5			
Unknown Vineyards	1,060.8	2,194.4	1,542.2	1,068.4	2,194.4	1,542.2	1,060.8	37.1	1,060.8	1,060.8	2,194.4	1,542.2	1,059.2	1,059.2	7.3
Urban	105.9	200.0	333.4	104.0	196.3	333.4	93.1	104.9	86.6	105.9	200.0	333.4	90.5	90.5	58.2
Walnuts		0.1			0.1			2.8			0.1				
Water	11.8	43.5	14.5	11.8	43.5	14.5	11.8	7.6	11.8	11.8	43.5	14.5	11.8	11.8	4.0
Wheat	0.1		596.4	0.1		596.4	0.1		0.1	0.1		596.4	0.1	0.1	185.1
Wine Grapes			576.1			576.1						576.1			
Temporary Surface Impact	1,583.9	2,457.2	3,716.6	2,091.6	3,022.6	3,716.6	1,142.2	3,729.7	1,007.7	1,583.9	2,457.2	3,716.6	1,314.7	1,314.7	1,540.7
Alfalfa and Alfalfa Mixtures	84.4	400.6	423.4	86.1	416.3	423.4	37.2	178.1	37.2	84.4	400.6	423.4	83.2	83.2	50.1
Apples		0.0	46.2		0.0	46.2					0.0	46.2			
Apricots								0.0							
Asparagus	36.6	69.8		36.6	69.8		36.6	55.7	36.6	36.6	69.8		36.6	36.6	8.8
Beans (dry)			3.2			3.2						3.2			
Beans Green	7.9	7.4		7.9	7.4		7.9	6.2	0.6	7.9	7.4		8.8	8.8	
Bush Berries															
Cabbage		4.5			4.5						4.5				
Cherries	1.1	1.4		1.1	1.4		1.1	0.4	1.1	1.1	1.4		1.1	1.1	
Clover															
Corn	330.9	347.2	279.7	562.9	512.1	279.7	330.4	345.7	317.8	330.9	347.2	279.7	319.5	319.5	133.1
Cucurbits		44.6	81.0	15.1	44.6	81.0		3.1			44.6	81.0			1.6
Dairies ¹								1.4							
Eucalyptus															
Farmstead with residence	7.2	7.4	28.1	12.3	14.0	28.1	4.0	4.8	4.0	7.2	7.4	28.1	5.5	5.5	2.6
Farmstead without residence	2.8	4.7	1.3	4.5	4.6	1.3	1.7	3.0	1.2	2.8	4.7	1.3	2.6	2.6	2.7
Flowers/Nursery/Christmas		0.7			0.7						0.7				
Grain sorghum		25.2			25.2						25.2				
Grapefruit	1.1	1.1		1.1	1.1		1.1		1.1	1.1	1.1				
Idle	2.2	16.6	94.1	2.2	16.6	94.1	2.2	5.8	1.8	2.2	16.6	94.1	2.2	2.2	0.1
Kiwis			7.5			7.5						7.5			
Livestock Feed Lot			0.1			0.1						0.1			
Misc Deciduous															
Misc Grain and Hay			9.2			9.2		2.0				9.2			
Misc Grasses	0.6		0.2	2.4	19.7	0.2	0.6		0.6	0.6		0.2	0.6	0.6	
Miscellaneous semi-ag	42.7	88.3	101.1	57.5	95.1	101.1	37.3	36.4	36.8	42.7	88.3	101.1	37.9	37.9	17.5
Mixed (four or more)	0.1	0.1		0.1	0.1		0.1	0.3	0.3	0.1	0.1		0.1	0.1	
Mixed Deciduous															0.0
Mixed Pasture	67.2	43.3	347.8	27.9		347.8	2.6	8.1	2.6	67.2	43.3	347.8	29.3	29.3	

¹ Modeled effects at this location are associated with a proposed power line alignment running along Lambert Road, to the east of the MPTO tunnel alignment. However, for the purposes of analysis, it is assumed that direct effects on structures associated with power lines would be avoided through design of individual towers and poles. Therefore, it is assumed that direct effects on dairy operations would be avoided.

Category and Crop Type	Alternative														
	1A	1B	1C	2A ^a	2B ^a	2C	3	4	5	6A	6B	6C	7	8	9
Native Pasture	0.3	0.5	69.8	0.2	0.2	69.8	0.2		0.2	0.3	0.5	69.8	0.4	0.4	2.8
Native Vegetation	380.3	444.3	857.3	458.3	582.3	857.3	282.7	2,411.4	265.0	380.3	444.3	857.3	311.4	311.4	1,116.1
Not Surveyed			8.6			8.6						8.6			
Olives	0.5	8.8		0.1	8.0		0.1		0.1	0.5	8.8		0.1	0.1	
Onions and Garlic		28.0			28.0						28.0				
Peaches and Nectarines	31.1	4.6		31.1	4.6		2.4	2.2	2.4	31.1	4.6		31.1	31.1	
Pears	96.0	66.2	143.5	173.2	140.7	143.5	72.4	22.3	32.0	96.0	66.2	143.5	85.1	85.1	24.2
Peppers		2.7			2.7						2.7				
Potatoes		1.7			1.7						1.7				
Poultry Farms		0.1			0.1						0.1				
Rice		1.0			1.0						1.0				
Safflower	72.1	101.0	82.7	37.3	65.5	82.7	37.3	77.9	37.3	72.1	101.0	82.7	35.5	35.5	
Strawberries															
Sudan	0.4	13.7	3.1	0.4	13.7	3.1	0.4	2.2	0.4	0.4	13.7	3.1	0.4	0.4	
Tomatoes (Processing)	61.6	177.3	164.8	88.3	244.7	164.8	61.6	133.0	47.1	61.6	177.3	164.8	55.1	55.1	9.3
Turf Farms		39.8	50.0		39.8	50.0					39.8	50.0			
Unknown Deciduous Fruits and Nuts	27.2	18.0	2.0	24.6	14.5	2.0	11.6	7.2	11.6	27.2	18.0	2.0	23.3	23.3	
Unknown Field	0.2	6.4	91.1	0.2	6.4	91.1	0.2	2.2	0.2	0.2	6.4	91.1	0.2	0.2	
Unknown Grain and Hay	211.6	208.9	201.9	222.7	303.2	201.9	114.4	195.3	78.1	211.6	208.9	201.9	158.4	158.4	18.2
Unknown Pasture			21.2			21.2		0.0				21.2			
Unknown Rice	1.0			1.0			1.0	40.2	1.0	1.0			1.0	1.0	
Unknown Truck Nursery and Berry		0.0			0.0						0.0				
Unknown Vineyards	34.8	180.6	270.7	159.0	246.3	270.7	34.8	146.4	34.8	34.8	180.6	270.7	18.4	18.4	11.7
Urban	68.9	86.8	152.9	64.0	82.0	152.9	46.7	41.0	42.2	68.9	86.8	152.9	55.0	55.0	63.9
Walnuts		2.3			2.3			2.8			2.3				
Water	4.5	1.8	9.0	4.5	1.8	9.0	4.5	1.6	4.5	4.5	1.8	9.0	2.8	2.8	0.5
Wheat	9.0		61.2	9.0		61.2	9.0		9.0	9.0		61.2	9.0	9.0	77.5
Wine Grapes			104.2			104.2						104.2			
Grand Total	7,171.5	21,989.2	17,459.7	7,694.6	22,554.7	17,459.7	6,558.2	8,495.0	6,351.5	7,171.5	21,989.2	17,459.7	6,769.7	6,769.7	4,873.4

^a Assumes Intakes 1-3, 6, and 7; otherwise, effects would be the same as Alternative 1A and 1B, respectively.

^b Based on construction of north-south transmission line; otherwise, fewer total acres would be affected.

Note: Table based on DWR Engineering Geodatabases Rev10, Rev3b, CCO Rev4b, and the EIR_EIS_Class1 field in the BDCP_Landuse_Crop database. This database contains crop information from DWR land use surveys covering counties in the study area.

Appendix 16A

Regional Economic Impacts of Water Conveyance Facility Construction

The tables in this appendix represent detailed estimates of the economic effects of constructing the proposed water conveyance facility under various alternatives. Results were developed using estimated construction expenditures as an input to the IMPLAN model, which applies multipliers to generate estimates of employment and income change for the five-county Delta region. Further discussion of this analytical approach is provided in Chapter 16, *Socioeconomics*, Section 16.3.1.2. Model results are presented by alternative, economic sector, and year of construction. Results are also presented in terms of direct and total effects; total effects incorporate direct, indirect, and induced economic effects.

**Table 16A-7. Regional Economic Impacts By Affected Sector – Delta Region, Alternative 4:
Construction-Related Impacts**

	Employment		Income (million\$)	
	Direct	Total ^a	Direct	Total ^a
Year 1				
Agriculture	0	0	0.0	0.0
Manufacturing and construction ^b	66	67	0.0	0.0
Transportation, utilities, & warehousing	0	1	0.0	0.0
Trade	0	5	0.0	0.2
Information	0	0	0.0	0.0
Financial, insurance, & real estate	0	4	0.0	0.2
Services	0	13	0.0	0.6
Government	0	0	0.0	0.0
Total	66	90	0.0	1.1
Year 2				
Agriculture	0	1	0.0	0.1
Manufacturing and construction ^b	747	752	0.0	0.4
Transportation, utilities, & warehousing	0	10	0.5	1.0
Trade	0	55	0.0	2.1
Information	0	5	0.0	0.3
Financial, insurance, & real estate	0	46	0.0	2.0
Services	0	154	0.0	6.9
Government	0	3	0.0	0.2
Total	747	1,025	0.5	13.0

	Employment		Income (million\$)	
	Direct	Total ^a	Direct	Total ^a
Year 3				
Agriculture	0	14	0.0	0.7
Manufacturing and construction ^b	2,427	4,928	167.6	176.9
Transportation, utilities, & warehousing	0	119	1.0	8.8
Trade	0	564	0.0	22.4
Information	0	54	0.0	4.1
Financial, insurance, & real estate	0	462	0.0	20.7
Services	0	1,822	0.0	88.8
Government	0	24	0.0	2.2
Total	2,427	7,988	168.6	324.6
Year 4				
Agriculture	0	12	0.0	0.6
Manufacturing and construction ^b	1,743	4,028	153.3	161.5
Transportation, utilities, & warehousing	0	98	0.0	6.8
Trade	0	480	0.0	19.1
Information	0	47	0.0	3.5
Financial, insurance, & real estate	0	392	0.0	17.6
Services	0	1,566	0.0	76.7
Government	0	21	0.0	1.8
Total	1,743	6,644	153.3	287.8
Year 5				
Agriculture	0	10	0.0	0.5
Manufacturing and construction ^b	1,124	3,193	139.0	146.3
Transportation, utilities, & warehousing	0	85	0.0	5.9
Trade	0	403	0.0	16.1
Information	0	40	0.0	3.0
Financial, insurance, & real estate	0	328	0.0	14.8
Services	0	1,328	0.0	65.4
Government	0	17	0.0	1.5
Total	1,124	5,402	139.0	253.4
Year 6				
Agriculture	0	12	0.0	0.6
Manufacturing and construction ^b	1,572	3,877	154.8	163.0
Transportation, utilities, & warehousing	0	97	0.0	6.7
Trade	0	471	0.0	18.8
Information	0	46	0.0	3.4
Financial, insurance, & real estate	0	384	0.0	17.3
Services	0	1,543	0.0	75.7
Government	0	20	0.0	1.8
Total	1,572	6,451	154.8	287.4

	Employment		Income (million\$)	
	Direct	Total ^a	Direct	Total ^a
Year 7				
Agriculture	0	14	0.0	0.8
Manufacturing and construction ^b	2,207	4,979	185.9	196.0
Transportation, utilities, & warehousing	0	120	0.0	8.3
Trade	0	589	0.0	23.4
Information	0	57	0.0	4.3
Financial, insurance, & real estate	0	481	0.0	21.6
Services	0	1,918	0.0	93.9
Government	0	25	0.0	2.3
Total	2,207	8,185	185.9	350.6
Year 8				
Agriculture	0	15	0.0	0.8
Manufacturing and construction ^b	2,272	5,045	185.9	196.0
Transportation, utilities, & warehousing	0	121	0.0	8.3
Trade	0	594	0.0	23.6
Information	0	58	0.0	4.3
Financial, insurance, & real estate	0	485	0.0	21.8
Services	0	1,932	0.0	94.5
Government	0	25	0.0	2.3
Total	2,272	8,274	185.9	351.7
Year 9				
Agriculture	0	15	0.0	0.8
Manufacturing and construction ^b	2,278	5,071	187.4	197.5
Transportation, utilities, & warehousing	0	122	0.0	8.4
Trade	0	597	0.0	23.8
Information	0	58	0.0	4.3
Financial, insurance, & real estate	0	488	0.0	21.9
Services	0	1,944	0.0	95.1
Government	0	26	0.0	2.3
Total	2,278	8,320	187.4	354.2
Year 10				
Agriculture	0	15	0.0	0.8
Manufacturing and construction ^b	2,194	4,977	186.7	196.7
Transportation, utilities, & warehousing	0	120	0.0	8.3
Trade	0	590	0.0	23.5
Information	0	57	0.0	4.3
Financial, insurance, & real estate	0	482	0.0	21.6
Services	0	1,921	0.0	94.1
Government	0	25	0.0	2.3
Total	2,194	8,187	186.7	351.6

	Employment		Income (million\$)	
	Direct	Total ^a	Direct	Total ^a
Year 11				
Agriculture	0	14	0.0	0.8
Manufacturing and construction ^b	2,114	4,915	187.9	198.0
Transportation, utilities, & warehousing	0	120	0.0	8.3
Trade	0	587	0.0	23.4
Information	0	57	0.0	4.3
Financial, insurance, & real estate	0	479	0.0	21.5
Services	0	1,915	0.0	93.8
Government	0	25	0.0	2.3
Total	2,114	8,113	187.9	352.4
Year 12				
Agriculture	0	15	0.0	0.8
Manufacturing and construction ^b	2,248	5,250	201.5	212.3
Transportation, utilities, & warehousing	0	129	0.0	8.9
Trade	0	628	0.0	25.0
Information	0	61	0.0	4.6
Financial, insurance, & real estate	0	513	0.0	23.1
Services	0	2,050	0.0	100.4
Government	0	27	0.0	2.4
Total	2,248	8,673	201.5	377.5
Year 13				
Agriculture	0	8	0.0	0.4
Manufacturing and construction ^b	1,723	3,128	94.0	99.3
Transportation, utilities, & warehousing	0	67	0.0	4.6
Trade	0	341	0.0	13.6
Information	0	33	0.0	2.4
Financial, insurance, & real estate	0	280	0.0	12.5
Services	0	1,092	0.0	53.0
Government	0	15	0.0	1.3
Total	1,723	4,964	94.0	187.2
Year 14				
Agriculture	0	1	0.0	0.1
Manufacturing and construction ^b	486	560	4.8	5.2
Transportation, utilities, & warehousing	0	7	0.0	0.5
Trade	0	46	0.0	1.8
Information	0	4	0.0	0.3
Financial, insurance, & real estate	0	39	0.0	1.7
Services	0	136	0.0	6.3
Government	0	2	0.0	0.2
Total	486	795	4.8	16.1

^a Includes direct, indirect & induced effects.

^b Includes natural resources and mining.

Candidate KOP* Sensitivity Matrix Ratings

Rating Scale	0	1	2	3	4	5
<i>Visibility of project site from cKOP</i>	Not visible at all	Not very visible or details of site not discernable either due to distance or high number of obstructions	Somewhat visible and details start to become discernable, but views are highly segmented or not clear due to distance or obstructions	Moderately visible and details are discernable because of closer proximity and/or fewer obstructions	Mostly visible because in close proximity to cKOP and few obstructions	Directly visible because immediately adjacent to cKOP and no obstructions or in the foreground with no obstructions
<i>Visual Quality of views toward the project site from cKOP</i>	Very low (highly degraded visual conditions)	Low (degraded visual conditions compared to surrounding area and region)	Moderately low (visual quality slightly lower than what is consistent with the surrounding area or region, as a whole)	Moderate (visual quality consistent with the surrounding area and region with)	High (Has unique visual features, picturesque views, scenic vistas, or similar. May include water, mountains, or similar features that are revered in the surrounding area or region.)	Very High (Has unique visual features, picturesque views, cultural significance, or similar. May include water, mountains, or similar features that provide regional identity.)
<i>Intactness of views toward site from cKOP</i>	Very low (highly discordant landscape)	Low (Many discordant features in the landscape)	Moderately low (A number of discordant features in the landscape)	Moderate (A moderate amount of discordant features in the landscape)	High (Few discordant features in the landscape)	Very High (Little to no discordant features in the landscape)
<i>Concern Level resulting from proposed project from cKOP</i>	Very low (None to very little adverse effect from the proposed project)	Low (Few adverse effects would result from the proposed project due to distance and limited available views of the project)	Moderately low (Some effects from the proposed project would result in adverse changes in views that are visible in the background or are only partially/indirectly visible)	Moderate (Effects from the project would result in adverse changes in views that are visible in the middleground or there is heightened concern due to impacts to community)	High (Effects from project would result in adverse changes in views that are visible in the foreground and result in adverse visual changes to the community as a whole, adjacent sensitive viewers, scenic vistas, large portions of agricultural/open space lands, and/or eligible scenic roadways)	Very High (Effects from project would be immediate and in the foreground and result in dislocation, loss of very large portions of agricultural/open space lands, and/or impact officially designated scenic roadways or sensitive cultural resources)
<i>Duration of views toward the project site from cKOP</i>	None	Instantaneous (e.g., highway speeds)	Short (e.g., local roadway speeds)	Intermittent (e.g., visitors at parks)	Extended viewing times (e.g., places of businesses, schools)	Permanent (e.g., residents)
<i>Number of Viewers (relative to project)</i>	No viewers	Very few or lowest concentration of total viewers	Few or moderately low concentration of total viewers	Moderate number or moderate concentration of total viewers	Many or high concentration of total viewers	Most, highest concentration, or all of total viewers

* cKOPs are from public vantages, mostly along roadways, but where the cKOP on the roadway is next to a residence that cKOP is evaluated as a residential viewer to ensure that residential viewer groups were represented and assessed. The same was done for places of business, such as marinas and schools.

1

cKOP Sensitivity Matrix

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
1	N 38°26.130' (38°26'7.8")	W 121°30.550' (121°30'33.0")	5	4	4	5	5	3	26
2	N 38°26.182' (38°26'10.9")	W 121°30.780' (121°30'46.8")	5	4	4	5	5	3	26
3	N 38°26.144' (38°26'8.6")	W 121°30.953' (121°30'57.2")	5	4	4	5	5	3	26
4	N 38°26.036' (38°26'2.2")	W 121°31.148' (121°31'8.9")	5	4	4	5	5	3	26
5	N 38°26.150' (38°26'9.0")	W 121°31.335' (121°31'20.1")	5	4	4	5	5	3	26
6	N 38°26.164' (38°26'9.9")	W 121°31.600' (121°31'36.0")	3	4	4	4	2	3	20
7	N 38°26.172' (38°26'10.3")	W 121°31.618' (121°31'37.1")	2	4	4	4	2	3	19
8	N 38°26.021' (38°26'1.2")	W 121°31.643' (121°31'38.6")	5	4	4	5	2	3	23
9	N 38°26.041' (38°26'2.5")	W 121°31.926' (121°31'55.6")	2	4	4	4	2	3	19
10	N 38°25.680' (38°25'40.8")	W 121°31.946' (121°31'56.7")	2	4	4	4	2	3	19
11	N 38°25.212' (38°25'12.7")	W 121°31.624' (121°31'37.4")	2	4	4	4	5	4	23
12	N 38°25.078' (38°25'4.7")	W 121°31.535' (121°31'32.1")	1	3	3	4	5	4	20
13	N 38°24.852' (38°24'51.1")	W 121°31.392' (121°31'23.5")	5	3	3	5	2	4	22
14	N 38°24.894' (38°24'53.6")	W 121°31.202' (121°31'12.1")	5	4	4	5	2	3	23
15	N 38°24.595' (38°24'35.7")	W 121°30.992' (121°30'59.5")	5	4	4	5	2	3	23
16	N 38°24.458' (38°24'27.5")	W 121°31.103' (121°31'6.2")	5	4	4	5	5	3	26
17	N 38°24.006' (38°24'0.4")	W 121°30.896' (121°30'53.8")	4	4	4	4	5	3	24
18	N 38°23.975' (38°23'58.5")	W 121°30.722' (121°30'43.3")	5	4	4	5	2	3	23
19	N 38°23.503' (38°23'30.2")	W 121°30.892' (121°30'53.5")	5	4	4	5	2	3	23
20	N 38°23.422' (38°23'25.3")	W 121°30.750' (121°30'45.0")	4	4	4	5	5	3	25
21	N 38°23.410' (38°23'24.6")	W 121°30.753' (121°30'45.2")	4	4	4	5	2	3	22
22	N 38°23.406' (38°23'24.3")	W 121°30.761' (121°30'45.7")	4	4	4	5	2	3	22
23	N 38°23.374' (38°23'22.5")	W 121°30.769' (121°30'46.2")	4	4	4	5	2	3	22
24	N 38°23.226' (38°23'13.6")	W 121°30.985' (121°30'59.1")	5	4	4	4	2	3	22
25	N 38°23.119' (38°23'7.1")	W 121°30.902' (121°30'54.1")	5	4	4	5	5	3	26

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
26	N 38°23.027' (38°23'1.6")	W 121°31.183' (121°31'11.0")	5	4	4	4	3	3	23
27	N 38°23.009' (38°23'0.6")	W 121°31.215' (121°31'12.9")	5	4	4	4	3	3	23
28	N 38°23.009' (38°23'0.6")	W 121°31.215' (121°31'12.9")	5	4	4	4	3	3	23
29	N 38°22.920' (38°22'55.2")	W 121°31.168' (121°31'10.1")	5	4	4	5	5	3	26
30	N 38°22.783' (38°22'47.0")	W 121°31.503' (121°31'30.2")	4	4	4	4	5	3	24
31	N 38°22.690' (38°22'41.4")	W 121°31.413' (121°31'24.8")	5	4	4	5	2	3	23
32	N 38°22.688' (38°22'41.3")	W 121°31.409' (121°31'24.5")	5	4	4	5	2	3	23
33	N 38°22.445' (38°22'26.7")	W 121°31.343' (121°31'20.6")	5	4	4	5	2	3	23
34	N 38°22.434' (38°22'26.0")	W 121°31.328' (121°31'19.7")	5	4	4	5	5	3	26
35	N 38°22.288' (38°22'17.3")	W 121°31.275' (121°31'16.5")	4	4	4	4	2	3	21
36	N 38°22.185' (38°22'11.1")	W 121°31.377' (121°31'22.6")	5	4	4	5	2	3	23
37	N 38°22.092' (38°22'5.5")	W 121°31.151' (121°31'9.0")	5	1	2	5	2	4	19
38	N 38°21.979' (38°21'58.8")	W 121°31.340' (121°31'20.4")	5	3	3	5	2	3	21
39	N 38°21.799' (38°21'47.9")	W 121°31.187' (121°31'11.2")	5	4	4	5	2	3	23
40	N 38°21.622' (38°21'37.3")	W 121°31.251' (121°31'15.1")	5	4	4	5	2	3	23
41	N 38°21.612' (38°21'36.7")	W 121°31.250' (121°31'15.0")	5	4	4	5	5	3	26
42	N 38°21.649' (38°21'38.9")	W 121°31.421' (121°31'25.2")	5	4	4	4	5	3	25
43	N 38°21.604' (38°21'36.3")	W 121°31.483' (121°31'29.0")	4	4	4	4	5	3	24
44	N 38°21.509' (38°21'30.5")	W 121°31.629' (121°31'37.7")	5	4	4	5	2	3	23
45	N 38°21.496' (38°21'29.7")	W 121°31.462' (121°31'27.7")	5	4	4	5	5	3	26
46	N 38°21.483' (38°21'29.0")	W 121°31.497' (121°31'29.8")	5	4	4	5	4	3	25
47	N 38°21.359' (38°21'21.5")	W 121°31.619' (121°31'37.1")	5	4	4	5	5	3	26
48	N 38°21.357' (38°21'21.4")	W 121°31.619' (121°31'37.2")	5	4	4	5	2	3	23
49	N 38°21.266' (38°21'15.9")	W 121°31.914' (121°31'54.8")	5	4	4	5	2	3	23
50	N 38°21.144' (38°21'8.6")	W 121°31.829' (121°31'49.8")	5	4	4	5	5	3	26

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
51	N 38°21.010' (38°21'0.6")	W 121°32.195' (121°32'11.7")	5	4	4	5	2	3	23
52	N 38°20.871' (38°20'52.2")	W 121°32.462' (121°32'27.7")	3	4	4	4	2	3	20
53	N 38°20.844' (38°20'50.6")	W 121°32.609' (121°32'36.6")	4	3	3	4	5	3	22
54	N 38°20.748' (38°20'44.9")	W 121°32.191' (121°32'11.5")	5	3	4	5	2	3	22
55	N 38°20.556' (38°20'33.4")	W 121°32.340' (121°32'20.4")	5	3	4	4	2	3	21
56	N 38°20.748' (38°20'44.9")	W 121°33.227' (121°33'13.6")	5	4	4	5	2	3	23
57	N 38°20.206' (38°20'12.3")	W 121°33.875' (121°33'52.5")	1	4	4	3	2	3	17
58	N 38°19.254' (38°19'15.2")	W 121°34.578' (121°34'34.7")	4	4	4	5	5	3	25
59	N 38°18.253' (38°18'15.2")	W 121°34.299' (121°34'17.9")	3	4	4	3	2	3	19
60	N 38°18.169' (38°18'10.1")	W 121°34.353' (121°34'21.2")	1	4	4	3	2	3	17
61	N 38°18.010' (38°18'0.6")	W 121°34.102' (121°34'6.1")	2	4	3	3	2	3	17
62	N 38°17.764' (38°17'45.8")	W 121°34.010' (121°34'0.6")	1	4	4	3	2	3	17
63	N 38°17.494' (38°17'29.6")	W 121°33.744' (121°33'44.6")	1	4	4	3	2	3	17
64	N 38°17.522' (38°17'31.3")	W 121°33.651' (121°33'39.1")	2	4	4	3	2	3	18
65	N 38°17.288' (38°17'17.3")	W 121°33.380' (121°33'22.8")	3	4	4	3	5	3	22
66	N 38°16.991' (38°16'59.5")	W 121°33.156' (121°33'9.3")	0	4	4	3	2	3	16
67	N 38°16.876' (38°16'52.6")	W 121°32.815' (121°32'48.9")	1	4	4	3	5	3	20
68	N 38°16.656' (38°16'39.4")	W 121°32.545' (121°32'32.7")	1	4	4	3	5	3	20
69	N 38°16.393' (38°16'23.6")	W 121°32.361' (121°32'21.6")	5	4	4	3	2	3	21
70	N 38°16.396' (38°16'23.8")	W 121°32.352' (121°32'21.1")	5	4	4	3	2	3	21
71	N 38°22.154' (38°22'9.3")	W 121°31.103' (121°31'6.1")	4	3	3	5	5	4	24
72	N 38°22.127' (38°22'7.6")	W 121°30.954' (121°30'57.2")	5	3	3	5	5	4	25
73	N 38°21.990' (38°21'59.4")	W 121°30.924' (121°30'55.4")	5	3	3	5	5	4	25
74	N 38°21.989' (38°21'59.3")	W 121°30.634' (121°30'38.0")	5	3	3	5	5	4	25
75	N 38°21.944' (38°21'56.6")	W 121°30.481' (121°30'28.8")	5	3	3	2	2	3	18

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
76	N 38°20.108' (38°20'6.5")	W 121°33.511' (121°33'30.7")	0	3	4	3	2	3	15
77	N 38°19.822' (38°19'49.3")	W 121°34.042' (121°34'2.5")	1	3	3	3	5	4	19
78	N 38°19.722' (38°19'43.3")	W 121°34.215' (121°34'13.0")	1	2	2	3	5	4	17
79	N 38°19.682' (38°19'40.9")	W 121°33.336' (121°33'20.2")	5	3	4	5	5	2	24
80	N 38°19.841' (38°19'50.5")	W 121°32.739' (121°32'44.3")	5	3	4	5	2	2	21
81	N 38°20.125' (38°20'7.5")	W 121°32.168' (121°32'10.1")	5	3	4	5	2	2	21
82	N 38°20.109' (38°20'6.6")	W 121°31.756' (121°31'45.3")	5	3	4	5	2	3	22
83	N 38°19.309' (38°19'18.5")	W 121°31.680' (121°31'40.8")	5	3	4	5	2	3	22
84	N 38°19.236' (38°19'14.2")	W 121°31.596' (121°31'35.7")	5	3	4	5	5	3	25
85	N 38°19.227' (38°19'13.6")	W 121°31.197' (121°31'11.8")	5	3	4	5	2	3	22
86	N 38°19.232' (38°19'13.9")	W 121°31.086' (121°31'5.2")	5	3	4	5	5	3	25
87	N 38°19.229' (38°19'13.7")	W 121°30.162' (121°30'9.7")	5	3	4	5	2	3	22
88	N 38°19.144' (38°19'8.7")	W 121°31.173' (121°31'10.4")	5	3	4	5	2	3	22
89	N 38°18.802' (38°18'48.1")	W 121°31.110' (121°31'6.6")	5	3	4	5	2	2	21
90	N 38°18.802' (38°18'48.1")	W 121°31.857' (121°31'51.4")	5	3	4	5	2	2	21
91	N 38°18.594' (38°18'35.6")	W 121°32.163' (121°32'9.8")	5	3	4	5	2	2	21
92	N 38°18.407' (38°18'24.4")	W 121°33.132' (121°33'7.9")	5	3	4	5	2	2	21
93	N 38°14.323' (38°14'19.3")	W 121°31.846' (121°31'50.8")	2	4	4	3	5	3	21
94	N 38°14.282' (38°14'16.9")	W 121°32.067' (121°32'4.0")	5	4	4	4	2	3	22
95	N 38°14.280' (38°14'16.8")	W 121°32.092' (121°32'5.5")	5	4	4	4	2	3	22
96	N 38°9.757' (38°9'45.4")	W 121°36.611' (121°36'36.7")	2	4	4	0	2	4	16
97	N 38°6.799' (38°6'47.9")	W 121°32.565' (121°32'33.9")	0	4	3	3	3	3	16
98	N 37°53.396' (37°53'23.8")	W 121°33.883' (121°33'53.0")	5	4	4	4	1	3	21
99	N 37°53.401' (37°53'24.0")	W 121°33.001' (121°33'0.1")	5	4	3	4	1	3	20
100	N 37°51.010' (37°51'0.6")	W 121°37.384' (121°37'23.0")	5	4	3	4	1	3	20

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
101	N 37°49.756' (37°49'45.4")	W 121°36.286' (121°36'17.2")	2	3	2	4	1	3	15
102	N 37°49.397' (37°49'23.8")	W 121°35.785' (121°35'47.1")	5	4	2	4	1	3	19
103	N 37°48.983' (37°48'59.0")	W 121°35.099' (121°35'5.9")	5	3	2	4	1	3	18
104	N 37°48.997' (37°48'59.8")	W 121°35.052' (121°35'3.1")	5	3	2	4	2	3	19
105	N 37°48.679' (37°48'40.7")	W 121°34.632' (121°34'37.9")	5	3	2	4	1	3	18
106	N 37°49.015' (37°49'0.9")	W 121°33.670' (121°33'40.2")	5	2	2	4	2	3	18
107	N 37°48.836' (37°48'50.1")	W 121°33.569' (121°33'34.1")	5	3	2	4	2	3	19
108	N 37°48.717' (37°48'43.0")	W 121°33.598' (121°33'35.8")	2	3	2	4	2	3	16
109	N 37°48.674' (37°48'42.0")	W 121°33.597' (121°33'35.8")	3	3	2	4	2	3	17
110	N 37°48.663' (37°48'39.8")	W 121°33.605' (121°33'36.3")	3	3	2	4	2	3	17
111	N 37°48.679' (37°48'40.7")	W 121°33.551' (121°33'33.0")	2	3	2	5	5	3	20
112	N 38°19.337' (38°19'20.2")	W 121°27.964' (121°27'57.9")	0	3	2	5	1	4	15
113	N 38°16.948' (38°16'56.9")	W 121°27.662' (121°27'39.7")	3	3	3	3	2	3	17
114	N 38°16.817' (38°16'49.0")	W 121°27.864' (121°27'51.9")	3	3	3	3	2	3	17
115	N 38°16.607' (38°16'36.4")	W 121°29.059' (121°29'3.5")	4	3	3	3	2	3	18
116	N 38°15.046' (38°15'2.7")	W 121°28.020' (121°28'1.3")	4	3	3	3	5	2	20
117	N 38°14.762' (38°14'45.7")	W 121°27.703' (121°27'42.2")	5	3	4	5	2	2	21
118	N 38°14.763' (38°14'45.8")	W 121°26.792' (121°26'47.5")	5	3	4	5	2	2	21
119	N 38°13.535' (38°13'32.1")	W 121°26.779' (121°26'46.8")	4	3	3	4	5	3	22
120	N 38°13.570' (38°13'34.2")	W 121°25.936' (121°25'56.1")	5	3	3	5	2	3	21
121	N 38°12.683' (38°12'41.0")	W 121°26.795' (121°26'47.7")	3	3	2	4	5	2	19
122	N 38°12.278' (38°12'16.6")	W 121°26.832' (121°26'49.9")	4	3	4	4	2	2	19
123	N 38°11.387' (38°11'23.3")	W 121°26.829' (121°26'49.7")	5	3	3	2	2	2	17
124	N 38°11.380' (38°11'22.8")	W 121°26.080' (121°26'4.8")	5	3	3	5	2	2	20
125	N 38°6.918' (38°6'55.1")	W 121°26.752' (121°26'45.1")	5	3	3	4	1	3	19

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
126	N 38°6.917' (38°6'55.0")	W 121°26.380' (121°26'22.8")	2	3	3	3	1	3	15
127	N 38°6.916' (38°6'54.9")	W 121°26.380' (121°26'22.8")	3	3	4	3	1	3	17
128	N 38°6.917' (38°6'55.0")	W 121°26.126' (121°26'7.6")	3	3	4	3	1	3	17
129	N 38°6.913' (38°6'54.8")	W 121°25.916' (121°25'54.9")	4	3	4	4	1	3	19
130	N 38°6.925' (38°6'55.5")	W 121°25.795' (121°25'47.7")	5	3	3	5	1	3	20
131	N 38°6.927' (38°6'55.6")	W 121°25.772' (121°25'46.3")	5	3	3	5	1	3	20
132	N 38°6.969' (38°6'58.1")	W 121°25.357' (121°25'21.4")	5	3	3	5	1	3	20
133	N 38°6.954' (38°6'57.2")	W 121°25.357' (121°25'21.4")	5	3	3	5	1	3	20
134	N 38°3.480' (38°3'28.8")	W 121°23.895' (121°23'53.7")	5	3	3	3	2	3	19
135	N 38°3.524' (38°3'31.4")	W 121°25.061' (121°25'3.6")	4	4	3	3	2	3	19
136	N 38°3.030' (38°3'1.8")	W 121°25.083' (121°25'4.9")	4	4	3	3	4	3	21
137	N 38°2.770' (38°2'46.2")	W 121°25.111' (121°25'6.7")	4	3	3	3	4	3	20
138	N 38°2.613' (38°2'36.8")	W 121°25.013' (121°25'0.8")	1	3	3	3	4	3	17
139	N 37°59.660' (37°59'39.6")	W 121°25.225' (121°25'13.5")	4	3	2	4	2	2	17
140	N 37°59.248' (37°59'14.9")	W 121°24.517' (121°24'31.0")	4	3	3	4	4	3	21
141	N 38°21.612' (38°21'36.7")	W 121°31.250' (121°31'15.0")	5	3	3	5	2	2	20
142	N 37°57.338' (37°57'20.3")	W 121°24.602' (121°24'36.1")	3	3	3	5	5	2	21
143	N 37°56.751' (37°56'45.1")	W 121°25.322' (121°25'19.3")	5	3	4	5	2	2	21
144	N 37°56.914' (37°56'54.8")	W 121°24.228' (121°24'13.7")	5	3	3	5	2	2	20
145	N 37°55.807' (37°55'48.4")	W 121°25.636' (121°25'38.2")	2	3	3	3	2	2	15
146	N 37°55.380' (37°55'22.8")	W 121°26.038' (121°26'2.3")	3	3	4	3	1	3	17
147	N 37°55.617' (37°55'37.0")	W 121°25.567' (121°25'34.0")	4	3	2	4	1	3	17
148	N 37°55.609' (37°55'36.6")	W 121°25.517' (121°25'31.0")	5	3	3	5	1	3	20
149	N 37°55.608' (37°55'36.5")	W 121°24.813' (121°24'48.8")	5	3	3	5	1	3	20
150	N 37°55.616' (37°55'37.0")	W 121°24.630' (121°24'37.8")	5	3	3	4	1	2	18

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
151	N 37°53.749' (37°53'44.9")	W 121°27.649' (121°27'39.0")	5	4	3	5	2	2	21
152	N 37°53.083' (37°53'5.0")	W 121°27.409' (121°27'24.5")	5	4	3	5	2	2	21
153	N 37°50.519' (37°50'31.2")	W 121°32.236' (121°32'14.2")	3	3	2	3	2	2	15
154	N 37°50.527' (37°50'31.6")	W 121°30.836' (121°30'50.1")	5	4	3	5	5	2	24
155	N 37°50.532' (37°50'31.9")	W 121°30.012' (121°30'0.7")	5	4	4	5	2	2	22
156	N 38°26.207' (38°26'12.4")	W 121°31.621' (121°31'37.2")	3	3	3	5	5	1	20
157	N 38°25.224' (38°25'13.4")	W 121°31.682' (121°31'40.9")	1	3	2	3	5	4	18
158	N 38°24.970' (38°24'58.2")	W 121°32.308' (121°32'18.5")	5	3	4	5	5	3	25
159	N 38°24.860' (38°24'51.6")	W 121°33.022' (121°33'1.3")	3	3	3	3	5	3	20
160	N 38°24.176' (38°24'10.6")	W 121°32.664' (121°32'39.8")	0	4	4	0	2	2	12
161	N 38°23.411' (38°23'24.7")	W 121°32.902' (121°32'54.1")	0	4	4	0	2	2	12
162	N 38°22.229' (38°22'13.7")	W 121°34.224' (121°34'13.4")	5	3	4	4	2	2	20
163	N 38°22.258' (38°22'15.5")	W 121°35.007' (121°35'0.4")	5	3	3	4	2	3	20
164	N 38°21.386' (38°21'23.2")	W 121°35.082' (121°35'4.9")	5	3	4	5	2	3	22
165	N 38°21.381' (38°21'22.9")	W 121°35.063' (121°35'3.8")	5	3	4	5	2	3	22
166	N 38°21.417' (38°21'25.0")	W 121°37.223' (121°37'13.4")	5	3	4	5	2	2	21
167	N 38°20.678' (38°20'40.7")	W 121°37.229' (121°37'13.8")	3	4	4	3	2	3	19
168	N 38°20.679' (38°20'40.7")	W 121°37.769' (121°37'46.1")	5	4	4	5	2	3	23
169	N 38°18.821' (38°18'49.3")	W 121°37.849' (121°37'50.9")	4	4	4	4	2	3	21
170	N 38°17.613' (38°17'36.8")	W 121°38.696' (121°38'41.7")	5	3	2	4	2	3	19
171	N 38°17.426' (38°17'25.6")	W 121°38.692' (121°38'41.5")	1	3	2	4	4	3	17
172	N 38°17.390' (38°17'23.4")	W 121°38.343' (121°38'20.6")	5	4	4	4	2	3	22
173	N 38°17.423' (38°17'25.4")	W 121°38.107' (121°38'6.4")	5	4	4	4	2	3	22
174	N 38°17.516' (38°17'31.0")	W 121°38.043' (121°38'2.6")	5	4	4	4	2	3	22
175	N 38°16.523' (38°16'31.4")	W 121°38.385' (121°38'23.1")	5	4	4	5	2	3	23

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
176	N 38°15.923' (38°15'55.4")	W 121°38.577' (121°38'34.6")	5	4	3	5	5	3	25
177	N 38°14.582' (38°14'34.9")	W 121°39.540' (121°39'32.4")	5	4	4	5	2	3	23
178	N 38°14.570' (38°14'34.2")	W 121°39.465' (121°39'27.9")	5	4	4	5	2	3	23
179	N 38°14.544' (38°14'32.6")	W 121°38.506' (121°38'30.3")	5	4	4	5	2	3	23
180	N 38°13.923' (38°13'55.4")	W 121°40.111' (121°40'6.7")	5	4	4	5	2	3	23
181	N 38°8.907' (38°8'54.4")	W 121°39.244' (121°39'14.7")	4	4	4	4	1	3	20
182	N 37°59.444' (37°59'26.6")	W 121°39.529' (121°39'31.7")	0	3	2	1	2	4	12
183	N 37°59.471' (37°59'28.2")	W 121°38.474' (121°38'28.5")	1	2	2	1	2	4	12
184	N 37°58.131' (37°58'7.8")	W 121°38.450' (121°38'27.0")	5	2	2	5	2	4	20
185	N 37°58.131' (37°58'7.8")	W 121°37.449' (121°37'26.9")	3	3	2	4	5	4	21
186	N 37°57.269' (37°57'16.1")	W 121°38.454' (121°38'27.3")	3	3	2	4	2	4	18
187	N 37°56.401' (37°56'24.1")	W 121°38.435' (121°38'26.1")	4	3	3	4	2	4	20
188	N 37°56.402' (37°56'24.1")	W 121°37.361' (121°37'21.6")	5	2	2	5	4	4	22
189	N 37°55.534' (37°55'32.0")	W 121°38.421' (121°38'25.2")	5	3	2	4	5	5	24
190	N 37°55.534' (37°55'32.1")	W 121°37.373' (121°37'22.4")	5	2	2	5	2	5	21
191	N 37°54.655' (37°54'39.3")	W 121°38.282' (121°38'16.9")	5	3	3	5	2	5	23
192	N 37°54.654' (37°54'39.3")	W 121°37.394' (121°37'23.7")	5	3	2	5	2	5	22
193	N 37°53.790' (37°53'47.4")	W 121°38.295' (121°38'17.7")	5	3	3	5	2	5	23
194	N 37°53.788' (37°53'47.3")	W 121°37.405' (121°37'24.3")	2	2	2	4	5	5	20
195	N 37°53.386' (37°53'23.1")	W 121°38.404' (121°38'24.2")	5	4	3	5	2	5	24
196	N 37°53.421' (37°53'25.3")	W 121°37.376' (121°37'22.6")	1	2	2	2	4	5	16
197	N 37°53.401' (37°53'24.1")	W 121°36.188' (121°36'11.3")	2	3	3	3	2	5	18
198	N 37°52.504' (37°52'30.2")	W 121°37.385' (121°37'23.1")	3	3	2	4	4	4	20
199	N 37°52.048' (37°52'2.9")	W 121°37.430' (121°37'25.8")	1	4	4	3	5	4	21
200	N 37°52.043' (37°52'2.6")	W 121°36.932' (121°36'55.9")	1	2	2	2	2	4	13

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
201	N 38°15.819' (38°15'49.2")	W 121°31.457' (121°31'27.4")	0	4	4	3	2	3	16
202	N 38°15.702' (38°15'42.1")	W 121°31.430' (121°31'25.8")	0	4	4	3	5	3	19
203	N 38°15.547' (38°15'32.8")	W 121°31.102' (121°31'6.1")	1	3	4	3	2	3	16
204	N 38°15.534' (38°15'32.0")	W 121°31.061' (121°31'3.7")	2	3	3	4	5	3	20
205	N 38°15.358' (38°15'21.5")	W 121°30.835' (121°30'50.1")	5	4	4	2	2	3	20
206	N 38°15.073' (38°15'4.3")	W 121°30.595' (121°30'35.7")	5	4	4	5	5	3	26
207	N 38°15.064' (38°15'3.9")	W 121°30.591' (121°30'35.5")	5	4	4	5	5	4	27
208	N 38°15.059' (38°15'3.5")	W 121°30.584' (121°30'35.1")	5	4	4	5	5	4	27
209	N 38°15.046' (38°15'2.8")	W 121°30.611' (121°30'36.6")	5	4	4	5	5	4	27
210	N 38°15.042' (38°15'2.5")	W 121°30.619' (121°30'37.1")	5	4	4	5	4	4	26
211	N 38°14.998' (38°14'59.9")	W 121°30.596' (121°30'35.8")	5	4	4	5	4	4	26
212	N 38°15.036' (38°15'2.1")	W 121°30.725' (121°30'43.5")	5	3	3	5	5	4	25
213	N 38°14.864' (38°14'51.8")	W 121°30.602' (121°30'36.1")	5	3	3	5	2	4	22
214	N 38°14.825' (38°14'49.5")	W 121°30.580' (121°30'34.8")	5	2	2	4	3	4	20
215	N 38°14'43.34"	W 121°30'9.76"	2	3	4	3	3	2	17
216	N 38°14.830' (38°14'49.8")	W 121°30.704' (121°30'42.3")	5	2	2	5	2	4	20
217	N 38°14.725' (38°14'43.5")	W 121°30.762' (121°30'45.7")	5	3	3	5	4	4	24
218	N 38°14.618' (38°14'37.1")	W 121°30.755' (121°30'45.3")	5	3	3	5	4	4	24
219	N 38°14.610' (38°14'36.6")	W 121°30.875' (121°30'52.5")	5	3	3	5	2	4	22
220	N 38°14.590' (38°14'35.4")	W 121°30.820' (121°30'49.2")	5	4	4	5	4	4	26
221	N 38°14.581' (38°14'34.9")	W 121°30.801' (121°30'48.0")	5	3	4	5	4	4	25
222	N 38°14.578' (38°14'34.7")	W 121°30.909' (121°30'54.5")	5	4	4	5	4	4	26
223	N 38°14.557' (38°14'33.4")	W 121°30.926' (121°30'55.6")	5	4	4	5	2	4	24
224	N 38°14.553' (38°14'33.2")	W 121°30.927' (121°30'55.6")	5	3	3	5	2	4	22
225	N 38°14.551' (38°14'33.1")	W 121°30.919' (121°30'55.2")	5	4	3	5	2	4	23

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
226	N 38°14.545' (38°14'32.7")	W 121°30.928' (121°30'55.7")	5	4	3	5	2	4	23
227	N 38°14.555' (38°14'33.3")	W 121°30.889' (121°30'53.3")	5	4	4	5	2	4	24
228	N 38°14.509' (38°14'30.6")	W 121°30.875' (121°30'52.5")	5	4	3	5	2	4	23
229	N 38°14.487' (38°14'29.2")	W 121°30.885' (121°30'53.1")	5	3	3	5	2	4	22
230	N 38°14.463' (38°14'27.8")	W 121°31.041' (121°31'2.5")	3	4	4	5	2	4	22
231	N 38°14.453' (38°14'27.2")	W 121°31.058' (121°31'3.5")	5	3	3	5	2	4	22
232	N 38°14.409' (38°14'24.6")	W 121°31.159' (121°31'9.5")	5	4	4	5	2	3	23
233	N 38°14.405' (38°14'24.3")	W 121°31.223' (121°31'13.4")	5	4	4	5	2	3	23
234	N 38°14.396' (38°14'23.7")	W 121°31.368' (121°31'22.1")	5	4	4	5	2	3	23
235	N 38°14.382' (38°14'22.9")	W 121°31.518' (121°31'31.1")	5	4	4	5	5	3	26
236	N 38°14.275' (38°14'16.5")	W 121°31.072' (121°31'4.3")	5	4	4	5	2	3	23
237	N 38°14.273' (38°14'16.4")	W 121°31.015' (121°31'0.9")	5	3	3	5	2	3	21
238	N 38°14.238' (38°14'14.3")	W 121°31.080' (121°31'4.8")	5	4	4	5	2	3	23
239	N 38°13.543' (38°13'32.6")	W 121°29.542' (121°29'32.5")	5	3	3	4	2	3	20
240	N 38°13.538' (38°13'32.3")	W 121°29.451' (121°29'27.0")	5	3	3	4	4	3	22
241	N 38° 6'59.31"	W 121°39'3.41"	4	4	4	3	2	1	18
242	N 38°6.563' (38°6'33.8")	W 121°41.788' (121°41'47.3")	0	3	3	4	3	3	16
243	N 38°6.432' (38°6'25.9")	W 121°41.726' (121°41'43.6")	4	3	3	5	3	3	21
244	N 38°6.423' (38°6'25.4")	W 121°41.719' (121°41'43.1")	4	4	4	5	3	3	23
245	N 38°6.396' (38°6'23.8")	W 121°41.731' (121°41'43.9")	4	4	4	5	3	3	23
246	N 38°6.359' (38°6'21.5")	W 121°41.757' (121°41'45.4")	5	4	4	5	3	3	24
247	N 38°6.351' (38°6'21.1")	W 121°41.765' (121°41'45.9")	5	4	4	5	3	3	24
248	N 38°6.348' (38°6'20.9")	W 121°41.799' (121°41'48.0")	5	4	3	5	3	3	23
249	N 38°6.350' (38°6'21.0")	W 121°41.840' (121°41'50.4")	5	4	3	5	3	3	23
250	N 38°6.353' (38°6'21.2")	W 121°41.859' (121°41'51.6")	5	4	3	5	3	3	23

cKOP	Latitude	Longitude	Visibility	Visual Quality	Intactness	Concern Level	Duration	Number of Viewers	Total Points
251	N 38°6.364' (38°6'21.9")	W 121°41.885' (121°41'53.1")	5	4	3	5	3	3	23
252	N 38°6.378' (38°6'22.7")	W 121°41.926' (121°41'55.6")	5	4	3	5	3	3	23
253	N 38°6.394' (38°6'23.6")	W 121°41.825' (121°41'49.5")	5	3	3	5	3	3	22
254	N 37°56.482' (37°56'28.9")	W 121°31.889' (121°31'53.3")	5	4	3	5	4	2	23
255	N 37°56.349' (37°56'21.0")	W 121°31.880' (121°31'52.8")	5	4	3	4	2	2	20
256	N 38°16.598' (38°16'35.9")	W 121°29.079' (121°29'4.7")	5	4	4	5	5	3	26
257	N 38°16.598' (38°16'35.9")	W 121°29.079' (121°29'4.7")	4	3	3	3	5	2	20
258	N 38°13.537' (38°13'32.2")	W 121°29.649' (121°29'38.9")	5	3	3	4	2	3	20

Photo Simulation Data Sources and Assumptions

17B.1 Data Sources

Reports

- Draft_CER_All_Tunnel_Option_Volume_2,_Rev_A.pdf
- TM 20-2 Rev 0 Proposed North Intake Facilities for the Draft EIRS.pdf
- DHCCP EIR Supplemental Information_rev 0 _4-5-10_[1].pdf
- 2011-09-12 Info Summary Memo for Intakes Alt 3, Alt 4, Alt 5, 6 & 7.pdf
- MDC Option Report (DCN_WAS_DWR-00328).pdf
- MPTO_CER_FINALDRAFT_12-21-12_VOL1_CONCEPT_REPORT_NARRATIVE.PDF
- MPTO_CER_FINALDRAFT_12-21-12_VOL2_CONCEPTDRAWINGS_PART2.PDF
- MPTO_CER_FINALDRAFT_12-21-12_VOL2_CONCEPTDRAWINGS_PART1.PDF
- Volume 1 - Draft CER-CCO (03-01-2015).PDF
- Volume 2 - Draft CER-CCO (03-05-2015).PDF

GIS

- Eng_Rev9b (KMZ files showing facilities for Alternatives 1 through 8)
- Eng_Rev10 (KMZ files showing facilities for Alternatives 1 through 8)
- SCO-Rev3 (Alternative 9.kmz showing DCC and GS intakes)
- CCO Rev 5a.kmz (KMZ files showing facilities for Alternative 4)

17B.2 Assumptions

- All intakes will be on-bank; none will be in-river.

Visibility of Features and Inclusion in Visual Simulations

- Intake facility features likely to be clearly visible from most or all visual simulation viewpoints include: on-bank intake structures, pumping plants, surge towers, and SR 160 realignments. In Alternative 4, visible features would include the intake structure, storage and electrical buildings, the substation, security fencing, and perimeter trees. Removal of trees and buildings for grading and construction will also be a visible change.
- All features except the intake structures would be partly obscured after several years by growth of trees planted around each intake site outside the security fencing. For Alternative 4, buildings heights and colors determined using Volumes 1 and 2 of Draft CER-CCO.

- Features not likely to be visible because of their low profile, small size, or screening by other features include: sedimentation basins, solids lagoons, valve vaults, air vents, and other at-grade or low-profile structures.
- Features not shown in the simulations because they are temporary and would not be present after completion includes: temporary access roads, temporary work area fencing, and sheet pile coffer dams.

Intakes 1–5 (Alternatives 1–8)

- Locations: use the Eng_Rev9b GIS files, Alt 1A for east-side intakes and Alt 1C for west-side intakes, but assume locations are approximate, subject to minor adjustments in later more detailed site-specific design. For Alternative 4, use the CCO Rev 5a GIS files for east-side intakes.
- Site-specific locations of intake structures, pumping plants, transformers, substations, permanent road realignments, and temporary roads: use the Eng_Rev9b GIS files (CCO Rev 5a GIS files for Alternative 4), but assume these locations are approximate, subject to minor adjustments in later more detailed site-specific design.
- West-side intakes only: levee and intake area footprints and major structures are not clearly delineated in Eng_Rev9b (because they are for in-river intakes and even then are too generalized and fewer features are shown), so use the final levee and intake area footprint delineated in Figure ON-6 (page 134 in TM 20-2 Rev 0 Proposed North Intake Facilities for the Draft EIRS.pdf) for Intake 4-East as a generic envelope to apply as needed to west-side Intakes.
- Locations of sedimentation basins, solids lagoons, and security fencing are not delineated in Eng_Rev9b, so use Figure ON-6 (page 134 in TM 20-2 Rev 0 Proposed North Intake Facilities for the Draft EIRS.pdf) for Intake 4-East as a generic site plan to apply as needed to Intakes 1–5 East and West. Used CCO Rev 5a GIS files for Alternative 4.

Intake 3-East (Alternatives 1A, 1B, 2A, 2B, 6A, 6B, 7, and 8)

- All buildings and trees completely or partially covered by Polygon 1616 (Alt 1A, Intake 3, Permanent Surface Impact) in Eng_Rev9b would be removed.

Intake 4-East (Alternatives 1A, 1B, 2A, 2B, 6A, and 6B)

- All buildings and trees completely or partially covered by Polygon 1644 (Alt 1A, Intake 4, Permanent Surface Impact) in Eng_Rev9b would be removed.

Intake 2-West (Alternatives 1C, 2C, and 6C)

- Buildings and trees at the southeast end of Clarksburg along County Hwy E9 would be removed.
- Buildings and trees at the intersection of County Hwy E9 and County Rd 141 would be removed.

Intakes 2-East and 3-East (Alternative 4)

- Locations: use the CCO Rev 5a GIS files.

Delta Cross Canal Intake at Walnut Grove and Locke (Alternative 9)

- Location and length: see SCO-Rev3 (Alternative 9.kmz)

- Approximate and generalized design of DCC and GS intake structures: see MDC Option Report (DCN_WAS_DWR-00328).pdf
- Visible surfaces would be concrete and that floating log booms would be located in front of the intake bays. Existing vegetation on the levee within the intake structure footprint would be removed.

Launch/Retrieval Shaft Site near Isleton Road

- Buildings within the barge unloading facility area near Isleton Road would be removed. The elevated pad for construction of launch and retrieval shafts would be removed after construction. The permanent access road would be built at approximately existing grade.

Intermediate Forebay (Alternatives 1–8)

- Location: Use the Eng_Rev10 GIS files. Assume footprints of embankments, roads, and work areas are approximate, subject to minor adjustments in later more detailed site-specific design.
- Visibility: The forebay embankment would be about 27 ft. (8.3 m) high, but about 0.6 mile away, therefore not visually prominent. The permanent 230kV transmission line would not be visible because it would be almost directly overhead. Structures and access roads at the north end of intermediate forebay would not be visible because of their low profile and distance from the camera (0.60 to 0.7 mile).

Intermediate Forebay (Alternative 4)

- Locations: use the CCO Rev 5a GIS files. The site would border the north side of Twin Cities Road.
- Visibility: The forebay embankment crest would be about 32 feet above sea level. The height of the overflow containment berm was not defined in the CER; its crest was assumed to be approximately 10 feet above sea level.

East canal from I-5 near the Lambert Road overpass

- The canal levee would be approximately 2 miles away, so the levee height of 25 feet would be very low in the distance, just a very thin line near the horizon. The siphon would be slightly visible as gap in the levee. The bridge and ramp on Lambert Road would be partly obscured by trees.

East canal from SR 12 near Guard Road

- The grain elevators and associated buildings are within the canal footprint would all be removed. Trees on both sides of road would be removed from the start of road work to the canal levee. The west end of bridge over canal may be visible, but very small.

East canal from SR 4 near South Whiskey Slough Road

- The nearest edge of levee, about 25 feet high, would be about 0.37 mile away. Buildings and trees in distance would be on far side of canal, beyond permanent impact area.

West canal from SR 4 near Discovery Bay

- The nearest edge of levee would be about 0.22 mile away. Houses and trees on far side of fields are outside impact areas on far side of canal. Assume that trees and buildings on the south side

1 of SR 4 within the permanent and temporary impact areas would be removed. The west end of
2 bridge over the canal may be visible, but very small.

3 **Operable barrier on Threemile Slough at Brannan Island SRA**

- 4 • The operable barrier would use miter gates, extending the full width of the waterway, with the
5 gates normally be closed, and with a lock for boat passage. Assume the boat lock and control
6 building would be on the north side of the channel. Assume that visible surfaces would be
7 concrete and that floating log booms would be located in front of gates not intended for boat
8 passage.

9 **Channel Modification at Hammer Island**

- 10 • No detailed designs are available, only the approximate positions of new levees and channels.
11 Assume that all existing structures and woody vegetation would be removed within the
12 apparent channel and levee modification areas.

Appendix 17C

Scenic Quality Rating Summaries

Explanation of Rating Criteria

Landform

Topography becomes more interesting as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, as the Grand Canyon, the Sawtooth Mountain Range in Idaho, the Wrangell Mountain Range in Alaska, or they may be exceedingly artistic and subtle as certain badlands, pinnacles, arches, and other extraordinary formations.

Vegetation

Give primary consideration to the variety of patterns, forms, and textures created by plant life. Consider short-lived displays when they are known to be recurring or spectacular. Consider also smaller scale vegetational features which add striking and intriguing detail elements to the landscape (e.g., gnarled or windbeaten trees, and joshua trees).

Water

That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.

Color

Consider the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) as they appear during seasons or periods of high use. Key factors to use when rating "color" are variety, contrast, and harmony.

Adjacent Scenery

Degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the rating unit. The distance which adjacent scenery will influence scenery within the rating unit will normally range from 0-5 miles, depending upon the characteristics of the topography, the vegetative cover, and other such factors. This factor is generally applied to units which would normally rate very low in score, but the influence of the adjacent unit would enhance the visual quality and raise the score.

Scarcity

This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within one physiographic region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery - the scarcity factor can be used to recognize this type of area and give it the added emphasis it needs.

Cultural Modifications

Cultural modifications in the landform/water, vegetation, and addition of structures should be considered and may detract from the scenery in the form of a negative intrusion or complement or improve the scenic quality of a unit. Rate accordingly.

1 Scenic Quality Rating Summary

KOP	Feature	View	Jerry Gonsalves	Kristin Lantz	Jennifer Stock	Paul Weller	Averaged Total	FINAL RATING
KOP 15	Intake 2W	Existing	-	18.0	19.0	18.75	18.58	C
		Simulated	-	13.0	9.0	10.0	10.67	E
KOP 34	Intake 3E: January 2012 (Alts 1A, 1B, 2A, 2B, 6A, 6B, 7, 8)	Existing	-	14.0	15.0	13.5	14.17	D
		Simulated	-	9.0	10.5	8.5	9.33	E
KOP 34	Intake 3E: July 2013 (Alts 1A, 1B, 2A, 2B, 6A, 6B, 7, 8)	Existing	-	15.0	15.5	13.5	14.75	D
		Simulated	-	11.5	12.25	6.0	9.92	E
KOP 34	Intake 3E: January 2012 (Alt 4)	Existing	-	14.0	15.0	13.5	14.17	D
		Simulated	-	10.5	12.25	11.75	11.5	E
KOP 34	Intake 3E: July 2013 (Alt 4)	Existing	-	15.0	15.5	13.5	14.67	D
		Simulated	-	13.5	13.75	12.25	13.17	E
KOP 45	Intake 4E	Existing	-	18.0	19.5	18.75	18.75	C
		Simulated	-	12.0	13.0	10.0	11.67	E
KOP 45	Intermediate Forebay (Alts 1A, 2A, 3, 5, 6A, 7, 8)	Existing	-	9.5	11.5	14.0	11.67	E
		Simulated	-	8.5	10.25	12.5	10.42	E
KOP 95	Isleton Road Shaft Site	Existing	-	16.5	14.0	13.0	14.50	D
		Simulated	-	13.5	11.5	8.25	11.08	E
KOP 109	Channel Modification at Hammer Island	Existing	13.0	-	16.0	12.25	13.75	D
		Simulated	12.5	-	15.5	10.25	12.75	E
KOP 113	Canal from I-5	Existing	8.0	-	13.0	5.25	8.75	E
		Simulated	6.5	-	12.5	4.5	7.83	F
KOP 128	Canal crossing SR 12	Existing	11.5	-	11.5	15.25	12.75	E
		Simulated	11.0	-	9.0	11.75	10.58	E
KOP 147	Canal crossing SR 4	Existing	5.5	-	10.0	3.75	6.42	F
		Simulated	5.5	-	10.0	2.25	5.92	F
KOP 195	Canal crossing SR 4	Existing	12.0	-	14.0	9.25	11.75	E
		Simulated	7.5	-	11.5	5.5	8.17	F
KOP 219	Fish Screen at Walnut Creek	Existing	21.0	-	19.5	20.5	20.33	C
		Simulated	10.5	-	14.5	9.25	11.42	E
KOP 252	Operable Barrier at Brannan SRA	Existing	15.5	-	20.0	15.5	17.00	D
		Simulated	10.0	-	12.5	9.0	10.50	E
KOP 256	Intake 2E (Alt 4)	Existing	20.5	-	20.0	15.0	18.50	C
		Simulated	12.5	-	8.5	3.75	8.25	F
KOP 257	Intermediate Forebay (Alt 4)	Existing	-	11.0	12.5	12.5	12.00	E
		Simulated	-	8.5	8.0	8.5	8.33	F
a = Scenic Quality Ratings:		C = 19–23	F = 4–8					
A = 29–32		D = 14–18	G = 0–3					
B = 24–28		E = 9–13						

2

Permanent Impacts after Construction is Complete

Table 17D-1. Pipeline/Tunnel Alignment Alternatives (1A, 2A, 3, 5, 6A, 7, and 8)

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
CH E9 and SR 160 from cKOP 1 to Intake 1 (includes cKOPs 2–7)	Foreground and middleground views from CH E9, SR 160, and Cliff’s Marina	Highway travelers experience views of large, mature trees and shrubs along roadside, wide meandering waters of the Sacramento River, intermittent expansive views of flat, large agricultural areas depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops and orchards. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, nursery, and farmstead buildings.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	N/A	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas and RTM area would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from Intake 1 to Intake 2 (includes cKOPs 8–18)	Foreground and middleground views from CH E9 SR 160, and Clarksburg Marina	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards and vineyards are also present. Curvilinear form and wide meandering waters of the Sacramento River, curvilinear form and marshy areas associated with Elk Slough, and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields on one side and toward Sacramento River on the other. Human made features in the area include levees, farmstead residences, railroads, roadways, the Sugar Mill complex, and the town of Clarksburg. Area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Clarksburg.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, tunnel work and RTM areas, and transmission lines would be visually prominent in vista foreground and middleground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

¹ Refer to Chapter 17–Aesthetic and Visual Resources: Section 17.3.1, *Methods for Analysis*, for definitions.

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
Area surrounding pipeline/tunnel alignment from Intake 1 to Intake 2	Foreground to middleground views from Scribner Road, Sacramento Southern Branch of the Union Pacific Railroad, and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides and near small farmstead buildings. Orchards and vineyards are also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Clarksburg. Angular irrigation and drainage ditches also define the landscape. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	New sources of security light from Intakes 1 and 2, associated pumping plants, and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from Intake 2 to Intake 3 (includes cKOPs 18–34)	Foreground to middleground views from CH E9, SR 160, and Clarksburg Boat Launch	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and pumping plants would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	New sources of security light from Intakes 2 and 3, associated pumping plants, and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Intake 2 to Intake 3 (includes cKOPs 18–25)	Foreground to middleground views from River Park Drive and local farm roads and private drives	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and levees of the Sacramento River and angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	New sources of security light from Intakes 2 and 3, associated pumping plants, and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
CH E9 and SR 160 from Intake 3 to Intake 4 (includes cKOPs 35–46)	Foreground to background views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings, depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops, vineyards, and orchards. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough and Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields and the town of Hood on the east side of the Sacramento River. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structure, pumping plant, access roads, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and pumping plants would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 4 and associated pumping plant	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Intake 3 to Intake 4 (includes cKOPs 31–35, 37, and 71–75)	Foreground to middleground views from Hood Franklin Road, 3 rd Street, 4 th Street, 5 th Street, 8 th Street, Blair Street, Cork Lane, and Sacramento Southern Branch of the Union Pacific Railroad. and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards and vineyards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and levees of the Sacramento River and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 4 and associated pumping plant	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
CH E9 and SR 160 from Intake 4 to Intake 5 (includes cKOPs 37–54)	Foreground to middleground views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural areas, including row crops and orchards. Some momentary views of Sacramento River coursing toward horizon. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough and Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structure, pumping plant, access roads, forebay, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed Intake 4 and pumping plant would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Intake 4 and 5 to the proposed forebay area south of Hood (includes cKOPs 81–88)	Foreground to middleground views from Lambert Road, Russell Road, and local farm roads and private drives; and I-5	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Row crops, orchards, and vineyards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. These features would be visually discordant with the area’s existing characteristics.	Proposed forebay, pumping plant, and transmission lines would be visually prominent in vista foreground and middleground views	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
CHE9, SR 160, and River Road from Intake 5 to Russell Road, off of River Road (includes cKOPs 55–61 and 76)	Foreground to middleground views from CHE9, SR 160, and River Road	Highway travelers experience views of large, mature trees and shrubs along roadside, wide meandering waters of the Sacramento River, occasional expansive views of mature ornamental tree groupings, row crops, vineyards, tree orchards, and other agricultural land located on nearby properties. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk and Steamboat Sloughs; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Courtland and Paintersville.	These project features would be visible from these segments of the roadways, but would be located at such a distance that they would not dominate the view	No project features would be immediately visible in foreground and middleground	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance and tunnel work areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities. Some ornamental vegetation and agricultural land would be removed and/or altered to build proposed permanent access road.	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intake 5 and associated pumping plant	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
SR 160, River Road, and Isleton Road from Russell Road, off of River Road, to Andrus Island Road (includes cKOPs 61–70 and 93–96)	Foreground to middleground views of surrounding area from SR 160, River Road, and Isleton Road	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards and row crops are also present. The curvilinear form and wide meandering waters of the Sacramento River and marshy areas associated with Snodgrass, The Meadows, and Georgiana Slough also defines landscape. Levee roads slope down toward agricultural fields on one side and toward Sacramento River on the other. Views of Walnut Grove and historic town of Locke. Human made features in the area near include levees, farmstead residences, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Locke and Walnut Grove.	Project facilities would be visible to the southeast on this segment of SR 160. Views toward the project area are limited by vegetation along SR 160 and Isleton Road, mature ornamental tree groupings, and orchards. The project area would be across the river, at a lower ground elevation than the raised roadway and would not be visible because intervening vegetation and lower elevation would preclude views from this side of the river.	Ventilation and shaft site northwest of Twin Cities Road would not be visible in vista middleground available from SR 160. RTM area and transmission lines would be visually prominent	No changes to views from this segment of SR 160 would occur. The project area would be across the river, at a lower ground elevation than the raised roadway and would not be visible because intervening vegetation and lower elevation would preclude views from this side of the river.	Negligible	Landscape Sensitivity Level: High Project’s Visual Dominance: Subordinate Project’s Overall Effect: Moderately Noticeable Project’s Overall Effect: Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
Area surrounding pipeline/tunnel alignment from Russell Road to Sacramento River, near River and Vorden Roads	Foreground to middleground views of surrounding area from Russell Road; Herzog Road; River Road; Alfalfa Plant Road; and Vorden Road.	Flat, expansive primarily agricultural terrain. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways. Orchards and row crops are also present. Curvilinear form and wide meandering waters of the Sacramento River and marshy areas associated with Snodgrass Slough also defines landscape. Human made features in the area near include levees, farmstead residences, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Project facilities would considerably alter area’s existing character, introducing large-scale visually towering industrial structures and new landforms that would be discordant with the area’s existing characteristics. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the Vorden Road connection to shaft site northeast of Sacramento River	Ventilation and shaft site northwest of Twin Cities Road and transmission lines would be visible in vista foreground available from Twin Cities Road and middleground available from River Road.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Sacramento River, near River and Vorden Roads, to Georgiana Slough	Foreground views of surrounding area from South River Road; River Road; Isleton Road; Leary Road; Georgiana Slough Road; Tyler Island Road; Andrus Island Road; CH E9; SR 160; Ko Ket Resort; and other nearby roads in the vicinity.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides and near small farmstead buildings, as well as thick vegetation associated with orchards. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Georgiana Slough; and more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways. Human made features in the area include levees, farmstead residences, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting off in distance in more developed areas such as Locke and Walnut Grove.	Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the Isleton Road connection to shaft site south of Sacramento River.	RTM area and transmission lines would be visually prominent in vista available from Isleton Road	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Moderately Noticeable
Area surrounding pipeline/tunnel alignment from Georgiana Slough to North Mokelumne River	Foreground to middleground views from Georgiana Slough Road; Tyler Island Road; Andrus Island Road; CH E9; SR 160; Georgiana Slough Fishing Access; and other nearby roads in the vicinity.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides and near small farmstead buildings, as well as thick vegetation associated with orchards. Curvilinear form and marshy areas of Georgiana Slough, and North Mokelumne River; and more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways. Human made features in the area include levees, farmstead residences, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed RTM area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the following locations: Brunk and Tyler Island Road connection Tyler Island Road connection to shaft site north of North Mokelumne River tunnel undercrossing	N/A	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
Area surrounding pipeline/tunnel alignment from North Mokelumne River to Woodward Canal (includes cKOP 98)	Foreground to middleground views from Staten Island levee, Bouldin Island levee, Kettleman Lane, Venice Island Levee, Mandeville Island levee, Bacon Island levee, Bacon Island Road, and Woodward Island levee; SR 12; and the Burlington Northern Santa Fe Railroad.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along levees and roadsides. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways. The curvilinear form and marshy areas of North Mokelumne River, South Mokelumne River, Potato Slough, San Joaquin River, Connection Slough, Middle River, and Old River; and the straight form of Woodward Canal defines the landscape. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, passing trains, and vehicles on roadways.	Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the following locations: Venice Island Road connection to shaft site north of San Joaquin River N. Bacon Island Road connection to shaft site north of Connection Slough N. Bacon Island Road connection to shaft site west of Middle River S. Bacon Island Road connection to shaft site west of Middle River and north of Old River/Railroad Cut	Ventilation and shaft site north of SR 12 and transmission lines would be visible in vista foreground available from SR 12. Ventilation and shaft site on Bacon Island would not be visible from Bacon Island Road because of levees, vegetation, and low profile but transmission lines would be visible.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Moderately Noticeable
Travelling by boat on Middle River between Connection Slough and Empire Cut	Foreground to middleground views from Middle River of Mandeville Island levee; Bacon Island levee; Bacon Island Road; and the Burlington Northern Santa Fe Railroad.	Narrow riparian vegetation strips along levees with occasional islands within the waterways. Riparian vegetation is primarily herbaceous. The curvilinear form and marshy areas of San Joaquin River, Connection Slough, and Middle River; and the straight form of Columbia Cut and Empire Cut defines the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, boats, passing trains, and vehicles on roadways.	Proposed RTM area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat.	N/A	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
Area surrounding pipeline/tunnel alignment from Woodward Canal to Byron Highway (includes cKOPs 99, 100, 107-111, 254, and 255)	Foreground to middleground views from Woodward Island levee, Victoria Island levee, Coney Island levee, Herdlyn Road, Lindemann Road, Kelso Road, and Byron Highway; SR 4 and CH J4; and River’s End Marina & Boat Storage.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways in some locations. The curvilinear form and marshy areas of Old River; straight form of Woodward Canal, North Victoria Canal, Victoria Canal, West Canal, Fabian and Bell Canal, and Grant Line Canal; the angular form of Central Valley Project Canal; and open water of the Clifton Court Forebay defines the landscape. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, industrial areas, boats, and vehicles on roadways. The River’s End Marina & Boat Storage is located at junction of Lindeman Road, Central Valley Project Canal, and Old River and includes some residences and businesses.	Proposed RTM area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the SR 4 connection to shaft sites north and south of the highway.	Ventilation and shaft site north of SR 4 and transmission lines would be visible in vista foreground available from SR 4. RTM area would be visually prominent from SR 4. Byron Tract Forebay would introduce a large scale water body into vista from Lindemann Road. Spoil/borrow area and transmission lines may be visually prominent from Lindemann Road.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Moderately Noticeable
Travelling by boat on Woodward Canal and Old River, from Woodward Canal to SR 4 bridge	Foreground to middleground views from Woodward Canal and Old River to Old River levees; Woodward Island levees; Victoria Island levees; and SR 4.	Narrow riparian vegetation strips along levees with occasional islands within the waterways. Riparian vegetation is primarily herbaceous. The curvilinear form and marshy areas of San Joaquin River, Connection Slough, Middle River, and Latham Slough; and straight Columbia and Empire Cuts defines the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, boats, and vehicles on roadways.	Proposed RTM area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat.	N/A	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-1. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ¹
Byron Highway from Clifton Court Road to Lindeman Road (includes cKOPs 102-106)	Foreground to middleground views from Byron Highway, Clifton Court Road, Herdlyn Road, Mountain House Road, Byron-Bethany Road, Lindemann Road, and Kelso Road; CH J4; and Union Pacific Railroad.	Large, flat agricultural areas to north, in close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. California Aqueduct and Central Valley Project Canal visible from highway. Transmission lines and a raised railroad bed on berm, running parallel to the northeast of the highway, are prominent in the immediate foreground. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, roadways, and California Aqueduct infrastructure. The local area is generally dark with lighting associated with residences, boats, trains, vehicles, and forebay facilities.	Loss of large agricultural area to accommodate the proposed forebay. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Introduction of a new, large water body.	N/A	N/A	Negligible	Landscape Sensitivity Level: Low Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Head of Old River at San Joaquin River (Alternatives 2A)	Foreground to background views of surrounding area from Upper Roberts Island and Stewarts Tract.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin and Old Rivers, more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. The view includes an impressive, prominent view of Mount Diablo in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with boats traveling on the San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across Old River and alter area’s existing character by introducing a large-scale industrial structure that is visually discordant with the area’s existing characteristics. Operable barrier would have a boat lock to permit continued boat access to the San Joaquin River and Old River. Any tunnel work area associated with construction of the barrier would also alter landforms by creating prominent sunken or elevated features. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed operable barrier would require elevated security lighting	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Source: Data compiled by DHCCP in 2010 and revised by ICF in 2011 and 2012.

1 **Table 17D-2. East Alignment Alternatives (1B, 2B, and 6B)**

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
CH E9 and SR 160 from ckOP 1 to Intake 1 (includes ckOPs 2–7)	Foreground and middleground views from CH E9, SR 160, and Cliff’s Marina	Highway travelers experience views of large, mature trees and shrubs along roadside, wide meandering waters of the Sacramento River, intermittent expansive views of flat, large agricultural areas depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops and orchards. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas and RTM area would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from Intake 1 to Intake 2 (includes ckOPs 8–18)	Foreground and middleground views from CH E9 SR 160, and Clarksburg Marina	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards also present. Curvilinear form and wide meandering waters of the Sacramento River, curvilinear form and marshy areas associated with Elk Slough, and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields on one side and toward Sacramento River on the other. Human made features in the area include levees, farmstead residences, railroads, roadways, the Sugar Mill complex, and the town of Clarksburg. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Clarksburg.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, tunnel work and RTM areas, and transmission lines would be visually prominent in vista foreground and middleground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from Intake 1 to Intake 2	Foreground to middleground views from Scribner Road, Sacramento Southern Branch of the Union Pacific Railroad, and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides and near small farmstead buildings. Orchards and vineyards are also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Clarksburg. Angular irrigation and drainage ditches also define the landscape. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from Intake 2 to Intake 3 (includes cKOPs 18–34)	Foreground to middleground views from CH E9, SR 160, and Clarksburg Boat Launch	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, a railroad right of way, a boat launch, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, boats, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and pumping plants would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 2 and 3 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from Intake 2 to Intake 3 (includes cKOPs 18–25)	Foreground to middleground views from River Park Drive and local farm roads and private drives	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and levees of the Sacramento River and angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, a railroad right of way, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 2 and 3 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CRE9 and SR 160 from Intake 3 to Intake 4 (includes cKOPs 35–46)	Foreground to background views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings, depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops, vineyards, and orchards. The curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough and Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields and the town of Hood on the east side of the Sacramento River. Human made features in the area include levees, farmstead residences, roadways, railroads, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, boats, and vehicles on roadways. Higher intensity lighting is present in isolated locations within more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structure, pumping plant, access roads, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and pumping plants would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 4 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Area surrounding canal conveyance alignment from Intake 3 to Intake 4 (includes cKOPs 31–35, 37, and 71–75)	Foreground to middleground views from Hood Franklin Road, 3 rd Street, 4 th Street, 5 th Street, 8 th Street, Blair Street, Cork Lane, and Sacramento Southern Branch of the Union Pacific Railroad. and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Vineyards and orchards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and levees of the Sacramento River and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, roadways, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 4 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
CH E9 and SR 160 from Intake 4 to Intake 5 (includes cKOPs 37–54)	Foreground to middleground views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural areas, including row crops and orchards. Some momentary views of Sacramento River coursing toward horizon. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough and Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed intake structure, pumping plant, access roads, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structure 4, pumping plant, and transmission lines would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Area surrounding pipeline/tunnel alignment from Intakes 4 and 5 to the Lambert Road (includes cKOPs 77-88 and 113)	Foreground to middleground views from Lambert Road and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Row crops, orchards, and vineyards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Riparian and wetland vegetation covers portions of the Stone Lakes National Wildlife Refuge. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridge would be a new visually dominant feature that would become part of Lambert Road. Mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal and along Lambert Road. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed bridges, access roads, spoil/borrow areas, canal, and transmission lines would be visually prominent in vista foreground and middleground views from Lambert Road. Proposed canal and spoil/borrow areas would visible in vista middleground views from I-5	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable
Area surrounding canal conveyance alignment from Lambert Road to Mokelumne River (includes cKOPs 114-116)	Foreground to middleground views from Lambert Road, Herzog Road, Russell Road, Dierssen Road, and Twin Cities Road; CH E13 and I-5; and the Stone Lakes National Wildlife Refuge and Cosumnes River Preserve	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Riparian and wetland vegetation covers portions of the Stone Lakes National Wildlife Refuge and Cosumnes River Preserve Areas. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of Lambert, Dierssen, and Twin Cities Roads. Mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal and along Lambert, Dierssen, and Twin Cities Roads. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed bridges, access roads, canal, and transmission lines would be visually prominent in vista foreground views from Twin Cities Road.	N/A		Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Area surrounding canal conveyance alignment from Mokelumne River to Disappointment Slough (includes cKOPs 117–139)	Foreground to middleground views from North Vail Road, West Barber Road, West Walnut Grove Road, North Blossom Road, West Peltier Road, West Woodbridge Road, North Guard Road, Guard Road, North Peatland Road, Rio Blanco Road, King Island Levee, West Eight Mile Road, and Bacon Island Road; CH J11, SR 12, and I-5; other nearby roads in the vicinity; White Slough Wildlife Area and Woodbridge Ecological Preserve; and The Reserve at Spanos Park Golf Course, the western edge of Spanos Park West Community, and Paradise Point Marina.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. The curvilinear form and marshy areas associated with the Mokelumne River, Hog Slough, Sycamore Slough, White Slough, Disappointment Slough, and Honker Cut; straight Beaver Slough and Telephone Cut; and angular Bishop Cut, Pixley Slough, and irrigation and drainage ditches also define landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, a marina, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, trains, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of West Barber, W. Walnut Grove, W. Peltier, W. Woodbridge, N. Grand, and W. Eight Mile Roads and SR 12. Several residences, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed canal, RTM and spoil/borrow areas, bridges, and transmission lines would visible in vista middleground views from North Vail and Blossom Hill Roads. Proposed canal, RTM and spoil/borrow areas, bridges, and transmission lines would visible in vista middleground views from North Rio Blanco Road. Proposed canal and RTM and spoil/borrow areas and transmission lines may be visible in vista middleground views from north end of North Holt Road and Windmill Cove Road.	N/A		Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Area surrounding canal conveyance alignment from Disappointment Slough to SR 4 (includes cKOPs 139–149)	Foreground to middleground views from West Rindge Road, West Neugerbauer Road, Windmill Cove, North Holt Road, Burns Cutoff, West House Road, North Inland Drive, West McDonald Road, South Holt Road, South Inland Drive, West Jacobs Road, South Landi Road, and West Lower Jones Road; SR 4; other nearby roads in the vicinity; the Burlington Northern Santa Fe Railroad; Windmill Cove Resort & Marina, Stockton Sailing Club, River Point Landing Marina, Buckley Cove Park, and Whiskey Slough Harbor.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, and orchards. Curvilinear form and marshy areas associated with Honker Cut, Disappointment Slough, San Joaquin River, Black Slough, Burns Cutoff, and Whiskey Slough; straight Twentyone Mile Cut; and angular Fourteen Mile Slough, Pixley Slough, Mosher Slough and irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, marinas, a park, and roadways. The local area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, marinas, boats, and vehicles on roadways. Project area is located just west of the highly developed outskirts of Stockton and would not be visible from I-5.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of W. McDonald Road and SR 4. A residence and farm buildings, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. The large scale of the proposed pumping plant, located 0.5 mile south of W. McDonald Road, would span across the canal and would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area's existing characteristics.	Proposed canal, RTM and spoil/borrow areas, bridges, and transmission lines would visible in vista middleground views from of North Holt and Windmill Cove Roads, South Inland Drive, and SR 4.	N/A	Project facilities would include new lighting systems used during the course of normal operations	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Area surrounding canal conveyance alignment from SR 4 to Clifton Court Forebay (includes cKOPs 102–111 and 146–155)	Foreground to middleground views from West Kingston School Road, South Inland Drive, West Klein Road, Cal Pack Road, Bonnetti Road, Clifton Court Road, and Herdlyn Road; Tracy Boulevard; SR 4 and CH J2; and West Kingston School and Union Point Marina.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings and row crops. Curvilinear form and marshy areas associated with Middle River, and Old River; straight Trapper Slough, Victoria Canal, Grant Line Canal, and Fabian and Bell Canal; and angular irrigation and drainage ditches also define landscape. Flat terrain, combined with intervening large-form dense vegetation sometimes does not permit views of area's background features. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, a school, a marina, and roadways. Area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, a school, a marina, boats, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of SR 4; W. Kingston School, Cal Pack, and Clifton Court Roads; and Tracy Boulevard. A farm buildings, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed canal, RTM and spoil/borrow areas, bridges, and transmission lines would visible in vista middleground views from SR 4, South Tracy Boulevard, and Clifton Court Road.	N/A		Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Clifton Court Forebay to Byron Highway (includes cKOPs 102–111)	Foreground to middleground views from Coney Island levee; Herdlyn Road; Lindemann Road; Kelso Road; Byron Highway; CH J4; Union Pacific Railroad; and River's End Marina.	Large, flat agricultural areas to north and east, in close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. California Aqueduct and Central Valley Project Canal visible from highway. Transmission lines and a raised railroad bed on berm, running parallel to the northeast of the highway, are prominent in the immediate foreground. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Curvilinear form and marshy areas associated with Old River; and straight Victoria Canal, Grant Line Canal, and Fabian Canal and Bell Canal also define landscape. Rivers End Marina & Boat Storage is located at junction of Lindeman Road, Central Valley Project Canal, and Old River and includes some residences and businesses. The local area is generally dark with lighting associated with residences, vehicles and boats traveling near confluence of Fabian and Bell Canal and Old River, the marina, trains, vehicles, and nighttime lighting of industrial and farmstead facilities.	Loss of large agricultural area to accommodate the proposed forebay. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Introduction of a new, large water body. The proposed control structures would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area's existing characteristics. New transmission lines would be visible along the southern edge of the new forebay.	Byron Tract Forebay would introduce a large scale water body into vista from Lindemann Road. Spoil/borrow and transmission lines area may be visually prominent from Lindemann Road.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Subordinate Project's Overall Effect: Moderately Noticeable

Table 17D-2. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Byron Highway from Clifton Court Road to Lindeman Road (includes cKOPs 102–106)	Foreground to middleground views from Byron Highway, Clifton Court Road, Herdlyn Road, Mountain House Road, Byron-Bethany Road, Lindemann Road, and Kelso Road; CH J4; and Union Pacific Railroad.	Large, flat agricultural areas to north, in close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. California Aqueduct and Central Valley Project Canal visible from highway. Transmission lines and a raised railroad bed on berm, running parallel to the northeast of the highway, are prominent in the immediate foreground. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, roadways, and California Aqueduct infrastructure. The local area is generally dark with lighting associated with residences, boats, trains, vehicles, and forebay facilities.	Loss of large agricultural area to accommodate the proposed forebay. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Introduction of a new, large water body. The proposed control structures would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area's existing characteristics. New transmission lines would be visible along the southern edge of the new forebay.	N/A	N/A	Negligible	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
Head of Old River at San Joaquin River (Alternative 2B)	Foreground to background views of surrounding area from Upper Roberts Island and Stewarts Tract.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin and Old Rivers, more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. The view includes an impressive, prominent view of Mount Diablo in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with boats traveling on the San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across Old River and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would have a boat lock to permit continued boat access to the San Joaquin River and Old River. Any tunnel work area associated with construction of the barrier would also alter landforms by creating prominent sunken or elevated features. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed operable barrier would require elevated security lighting	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
Source: Data compiled by DHCCP in 2010 and revised by ICF in 2011 and 2012.							

1 **Table 17D-3. West Alignment Alternatives (1C, 2C, and 6C)**

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
CH E9 and SR 160 from cKOP 1 to West Intake 1 (includes cKOPs 2–7)	Foreground and middleground views from CH E9 SR 160, and Clarksburg Marina	Highway travelers experience views of large, mature trees and shrubs along roadside, wide meandering waters of the Sacramento River, intermittent expansive views of flat, large agricultural areas depending on traveler's perspective on this segment of CH E9 and SR 160 that includes row crops and orchards. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible next to where pipeline was installed. Intake would result in a considerable loss of agricultural land, change in landform and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	N/A	Roadway realignment Yolo County scenic route, CH E9, near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas and RTM area would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
CH E9 and SR 160 from West Intake 1 to West Intake 2 (includes cKOPs 8–18)	Foreground and middleground views from CH E9 SR 160, and Clarksburg Marina	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards and vineyards also present. Curvilinear form and wide meandering waters of the Sacramento River, curvilinear form and marshy areas associated with Elk Slough, and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields on one side and toward Sacramento River on the other. Human made features in the area include levees, farmstead residences, railroads, roadways, the Sugar Mill complex, and the town of Clarksburg. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Clarksburg.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible next to where pipeline was installed. Intake would result in a considerable loss of agricultural land, change in landform and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area's existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, tunnel work and RTM areas, and transmission lines would be visually prominent in vista foreground and middleground views from CH E9. Proposed W2 intake structure and pumping plant would be visually prominent in vista foreground views from SR 160.	Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: High Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from West Intake 1 to West Intake 2 (includes cKOPs 158 and 159)	Foreground to middleground views from South River Road, River Road, Pumphouse Road, Willow Point Road, Willow Avenue, Clarksburg Road, Riverview Drive, Netherlands Avenue, and Scribner Road; CR 39, CH E19, CR 146B, CR 154, and CR 144.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides. Curvilinear form of Sacramento River and Elk Slough also defines landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Agricultural areas are mixed with row crops, vineyards, and orchards present. Human made features in the area include levees, farmstead residences, wineries, roadways, and the town of Clarksburg. Angular irrigation and drainage ditches also define the landscape. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Clarksburg.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible next to where pipeline was installed. Intake would result in a considerable loss of agricultural land, change in landform and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 1 and 2 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from West Intake 2 to West Intake 3 (includes cKOPs 18–34)	Foreground to middleground views from CH E9, SR 160, and Clarksburg Boat Launch	Mature ornamental tree groupings, row crops, vineyards, orchard trees, and other agricultural land uses are present. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, a boat launch, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, boats, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Proposed bridge would be new visually dominant feature that would become part of CR 142. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, pumping plants, surge shafts, access roads, tunnel work areas, canals, and transmission lines would be visually prominent in vista foreground and middleground views from CH E9. Proposed intake structure and pumping plant would be visually prominent in vista foreground views from SR 160.	Roadway realignment Yolo County scenic route, CH E9, near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 2 and 3 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from West Intake 2 to West Intake 3 (includes cKOPs 160 and 161)	Foreground to middleground views from South River Road, River Road, Scriber Road, South Center Street, and South School Street; CR 144, CR 141, and CR 142; and local farm roads and private drives.	Mature ornamental tree groupings, row crops, vineyards, orchard trees, and other agricultural land uses are present. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, wineries, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with Clarksburg and Hood, existing residences, farmstead buildings, wineries, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 2 and 3 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from West Intake 3 to West Intake 4 (includes cKOPs 35–46)	Foreground to background views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings, depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops, vineyards, and orchards The curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields. Human made features in the area include levees, farmstead residences, wineries, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, wineries, boats, and vehicles on roadways. Higher intensity lighting is present in isolated locations within more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structure, pumping plant, access roads, tunnel work areas, canals, and transmission lines would be visually prominent in vista foreground and middleground views from CH E9. Proposed intake structure and pumping plant would be visually prominent in vista foreground views from SR 160.	Roadway realignment Yolo County scenic route, CH E9, near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 3 and 4 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from West Intake 3 to West Intake 4	Foreground to middleground views from South River Road and River Road; and CR 142, CH E9, and SR 160.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Vineyards and orchards also present. The curvilinear form of Sacramento River and Elk Slough; and the more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Human made features in the area include levees, farmstead residences, wineries, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, wineries, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 3 and 4 associated pumping plants and surge shafts	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CH E9 and SR 160 from West Intake 4 to West Intake 5 (includes cKOPs 37–54)	Foreground to background views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural areas, including row crops and orchards. The curvilinear form of Sacramento River and Elk Slough; and the more angular irrigation and drainage ditches also define the landscape. Human made features in the area include farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, boats, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structure, pumping plant, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160	Roadway realignment Yolo County scenic route, CH E9, near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from West Intakes 4 and 5 to Jefferson Boulevard (includes cKOPs 122–165)	Foreground to middleground views from South River Road, River Road, South Netherlands Road, Waukeena Road, North Courtland Road, and Jefferson Boulevard; CH E9, SR 160, and SR 84.	While travelling along roadway, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, and orchards. The curvilinear form of Sacramento River and Elk Slough; and the more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridge would be a new visually dominant feature that would become part of Jefferson Boulevard. Mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of West Intakes 4 and 5 and associated pumping plant	Landscape Sensitivity Level: Low Project’s Visual Dominance: Dominant Project’s Overall Effect: Noticeable
Area surrounding canal conveyance alignment from Jefferson Boulevard to control structure located 1 mile south of SR 220 (includes cKOPs 163–108)	Foreground to middleground views from Jefferson Boulevard, South Netherlands Road, North Courtland Road, Alameda Avenue, Mallard Road, Widgeon Road, Z Line Road, Courtland Road, Ryer Avenue, Teal Road, Sutter Road, Oxford Road, Holland Road, Ryer Road, and Elevator Road; SR 84, CR 149, CR 150, CR 158, CR 107, CR 161, and SR 220; other nearby roads in the vicinity; and Arrow Head Harbor Marina.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. Curvilinear form and marshy areas associated with Miner Slough, Sutter Slough, and Elkhorn Slough; straight Sacramento River Deep Water Ship Channel; and more angular Duck Slough and irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area’s background features. Human made features in the area include levees, farmstead residences, transmission lines, a marina, and roadways. Area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, a marina, boats, and vehicles on roadways.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of Jefferson Boulevard, CR 161, SR 84, SR 220, and Elevator Road. Residences and farm buildings, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New transmission lines would be visible near new canal. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. The large scale of the proposed pumping plant would span across the canal and would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area’s existing characteristics.	Proposed canal/canal levee, access roads, bridges, tunnel work areas, and transmission lines would be visually prominent in vista foreground and middleground views from CR 158 and Ryer Road. Proposed canal/canal levee, access roads, and tunnel work areas would be visually prominent in vista foreground and middleground views from Holland Road. Proposed canal/canal levee, access roads, bridges, tunnel work and RTM areas, and pumping plant would be visually prominent in vista foreground and middleground views from SR 84.	N/A	Pumping plant would include new lighting systems used during the course of normal operations in the area SR 84 and SR 220	Landscape Sensitivity Level: Low Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding pipeline/tunnel alignment from control structure located 1 mile south of SR 220 to tunnel terminus located 0.5 mile south of E. Cypress Road (includes cKOPs 180–183 and 241)	Foreground to middleground views from Ryer Island Road, East Ryer Road, Grand Island Road, River Road, West Brannan Island Road, West Twitchell Island Road, Twitchell Island Ferry Road, Sunset Drive, Taylor Road, Bethel Island Road, West Willow Road, Harbor Road, Canal Road, Gateway Road, Cottage Lane, Dutch Slough Road, Sandmound Boulevard, and East Cypress Road; SR 84, SR 160, and SR 12; other nearby roads in the vicinity; and Hidden Harbor Marina, Vieira’s Resort, Franks Tract State Recreation Area, Willowest Harbor, Bethel Harbor, Anchor Marina, Bethel Island Golf Course, Seahorse Marina, Sunset Harbor, and Hennis Marina.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. Curvilinear form and marshy areas associated with Sacramento River Deep Water Ship Channel, Elkhorn Slough, Steamboat Slough, Sacramento River, Sevenmile Slough, San Joaquin River, False River, Taylor Slough, and Piper Slough; straight Fisherman’s Cut, Dutch Slough, and Sand Mound Slough; and more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area’s background features in some locations. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, marinas, a recreation area, and roadways. The local area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, marinas, boats, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Bethel Island.	Proposed RTM area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. This is most notable at beginning of pipeline/tunnel, between SR 160 and SR 12, and tunnel terminus. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the following locations: Ryder Road connection SR 160 connection to shaft site north of SR 12 Twitchell Island Road connection Bethel Island Road connection	Proposed RTM area would be visually prominent in vista foreground and middleground views from SR 12. Ventilation and shaft site west of Bethel Road would be visible in vista foreground available from road. Proposed canal/canal levee, access roads would be visually prominent in vista foreground and middleground views from E. Cypress Road.	N/A	Negligible	Landscape Sensitivity Level: Low Project’s Visual Dominance: Subordinate Project’s Overall Effect: Minimally Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from tunnel termini located 0.5 mile south of E. Cypress Road to SR 4 (includes cKOPs 182–197)	Foreground to middleground views from Jersey Island Road, East Cypress Road, Bethel Island Road, Sycamore Drive, Watchtide Way, Sandmound Boulevard, Holland Tract Road, Fire Place, Cow Poke Lane, Tule Lane, Bartels Drive, Blaine Lane, Delta Road, Eden Plains Road, Hotchkiss Road, Pastor Lane, Byron Highway, Baldocchi Court, Eagle Lane, Poe Lane, Mountain View Drive, Ironhorse Road, Sunset Road, Penny Lane, Crystal Lane, Orwood Road, Bixler Road, Chestnut Street, Balfour Road, Fallman Boulevard, Point of Timber Road, Fertado Lane, Ellisa Lane, Marsh Creek Road, Valley Oak Drive, and Taylor Lane; SR 4, CR J4; a number of nearby roads in the vicinity; Knightsen, Brentwood, Discovery Bay, and surrounding suburban developments; a number of rural residences and businesses located in between E. Cypress Road in the north and SR 4 in the south; and the Burlington Northern Santa Fe Railroad.	While travelling along roadways, expansive views of flat, large agricultural areas, rural residential and outlying suburban development, including mature ornamental tree groupings, row crops, and vineyards. The straight Sand Mound Slough, Rock Slough, Werner Dredger Cut, Main Canal, Indian Slough, and Kellogg Creek; and angular Contra Costa Canal and irrigation and drainage ditches also define the landscape. Human made features in the area include levees, rural residences, suburban development, businesses, transmission lines, parks, schools, detention basins, lakes, a railroad corridor, and roadways. The local area is fairly lit due to amount of development and roadways in the area.	Proposed tunnel work areas would be new visually prominent sunken or elevated landforms introduced to a landscape that is currently predominantly flat. Proposed bridges would be new visually dominant features that would become part of Delta, Orwood, Balfour, Point of Timber, and Marsh Creek Roads; Cow Poke and Eagle Lanes; and Taylor Lane/SR 4. A large number residences and farm buildings, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area.	Proposed canal/canal levee, access roads, and tunnel work areas would be visually prominent in vista foreground and middleground views from Orwood and Bixler Roads	N/A	Negligible	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Area surrounding canal conveyance alignment from SR 4 to Clifton Court Forebay (includes cKOPs 195–200 and 101–111)	Foreground to middleground views from Byron Highway, Taylor Lane, Hoffman Lane, Kellogg Creek Road, Bixler Road, Byer Road, Camino Diablo Road, Western Farms Ranch Road, and Clifton Court Road; SR 4 and CH J4; a number of nearby roads in the vicinity; Discovery Bay, Byron, and surrounding suburban developments; and a number of rural residences, schools, and businesses located along the SR 4 corridor.	While travelling along roadways, expansive views of flat, large agricultural areas with rural residential development, including mature ornamental tree groupings and row crops. The curvilinear form Italian Slough and Old River; the straight Kellogg Creek; more angular irrigation and drainage ditches; and large water body of the Clifton Court Forebay also define the landscape. Human made features in the area include rural residences, nearby suburban development, transmission lines, marinas and homes with boat slips, and roadways. Area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, marinas, and vehicles on roadways.	Residences and farm buildings, mature ornamental tree groupings and agricultural lands located within proposed canal and bridge right-of-ways and tunnel work areas would be removed to accommodate the proposed forebay and canal. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Introduction of a new, large water body with new forebay to northwest of existing forebay. Proposed bridges would be new visually dominant features that would become part of Taylor Lane/SR 4 and Bixler Road. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. The proposed control structures would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area’s existing characteristics.	Proposed canal/canal levee would be visible in vista foreground and middleground views from SR 4	N/A	Negligible	Landscape Sensitivity Level: High Project’s Visual Dominance: Co-dominant Project’s Overall Effect: Very Noticeable

Table 17D-3. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Byron Highway from Clifton Court Road to Lindeman Road (includes cKOPs 101–106)	Foreground to middleground views from Byron Highway, Clifton Court Road, Herdlyn Road, Mountain House Road, Byron-Bethany Road, Lindemann Road, and Kelso Road; CH J4; and Union Pacific Railroad.	Large, flat agricultural areas to north, in close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. California Aqueduct and Central Valley Project Canal visible from highway. Transmission lines and a raised railroad bed on berm, running parallel to the northeast of the highway, are prominent in the immediate foreground. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, roadways, and California Aqueduct infrastructure. The local area is generally dark with lighting associated with residences, boats, trains, vehicles, and forebay facilities.	Loss of large agricultural area to accommodate the proposed forebay. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Introduction of a new, large water body with new forebay to northwest of existing forebay. Proposed bridges would be new visually dominant features that would become part of Byron Highway. New canal right-of-way with levee would result in a considerable loss of agricultural land, change in landform, and increase in surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. The proposed control structures would contribute to the mass, form, and amount of industrial structures that are visually discordant with the area’s existing characteristics.	N/A	N/A	Negligible	Landscape Sensitivity Level: Low Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Head of Old River at San Joaquin River (Alternative 2C)	Foreground to background views of surrounding area from Upper Roberts Island and Stewarts Tract.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin and Old Rivers, more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. The view includes an impressive, prominent view of Mount Diablo in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with boats traveling on the San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across Old River and alter area’s existing character by introducing a large-scale industrial structure that is visually discordant with the area’s existing characteristics. Operable barrier would have a boat lock to permit continued boat access to the San Joaquin River and Old River. Any tunnel work area associated with construction of the barrier would also alter landforms by creating prominent sunken or elevated features. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed operable barrier would require elevated security lighting	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Source: Data compiled by DHCCP in 2010 and revised by ICF in 2011 and 2012.							

1 **Table 17D-4. Modified Pipeline/Tunnel Alignment Alternative (4)**

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
CH E9 and SR 160 from Intake 2 to Intake 3 (includes cKOPs 18–34)	Foreground to middleground views from CH E9, SR 160, and Clarksburg Boat Launch	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce large-scale industrial structures and water featured associated with sedimentation basins and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	Proposed intake structures, sedimentation basins, intake storage and electrical buildings, access roads, cranes, substations, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and cranes would be visually prominent in vista foreground views from CH E9.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities. Proposed intake structures, sedimentation basins, storage and electrical buildings, access roads, cranes, substation, fencing and perimeter landscaping would be visually prominent in foreground views from SR 160.	New sources of security light from Intakes 2 and 3. New source of glare from sedimentation basins.	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Intake 2 to Intake 3 (includes cKOPs 18–25)	Foreground to middleground views from River Park Drive and local farm roads and private drives	Mature ornamental tree groupings, orchard trees, and other agricultural features. Wooded riparian area located along canal south of Intake 3. Curvilinear form and levees of the Sacramento River and angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce structures associated with the intake facility and prominent sunken or elevated landforms would also be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics.	N/A	N/A	New sources of security light from Intakes 2 and 3	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

² Refer to Chapter 17–Aesthetic and Visual Resources: Section 17.3.1, *Methods for Analysis*, for definitions.

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
CH E9 and SR 160 from Intake 3 to Intake 5 (includes cKOPs 19–56)	Foreground to background views from CH E9 and SR 160	While travelling along highway, intermittent expansive views of flat, large agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings, depending on traveler’s perspective on this segment of CH E9 and SR 160 that includes row crops, vineyards, and orchards. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk Slough and Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Levee roads slope down toward agricultural fields and the town of Hood on the east side of the Sacramento River. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Hood.	Proposed intake facilities would introduce large-scale industrial structures, elevated landforms, and water features associated with sedimentation basins would be introduced to a landscape that is currently predominantly flat. These features would be visually discordant with the area’s existing characteristics. Proposed Intake Work Area would be restored after construction and not affect views from SR 160 and CH E9. Perimeter landscaping would help to slightly reduce the appearance of changes.	Proposed intake structure, sedimentation basins, intake storage and electrical buildings, access roads, cranes, substation, and transmission lines would be visually prominent in vista foreground and middleground views from SR 160. Proposed intake structures and cranes would be visually prominent in vista foreground views from CH E9. Proposed Intake Work Area would be restored after construction and not affect views from SR 160 and CH E9. Perimeter landscaping would help to slightly reduce the appearance of changes.	Roadway realignment of State Scenic Highway near intake. Mature ornamental tree groupings and orchard trees located within Intake and work area disturbance areas would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities. Proposed intake structures, sedimentation basins, storage and electrical buildings, access roads, cranes, substation, fencing and perimeter landscaping would be visually prominent in foreground views from SR 160.	Project facilities at Intakes would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 5.New source of glare from sedimentation basins. Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Intake 3 to Intake 5 (includes cKOP 73, 75, and 81–84)	Foreground to middleground views from Hood Franklin Road, 3 rd Street, 4 th Street, 5 th Street, 8 th Street, Blair Street, Cork Lane, and Sacramento Southern Branch of the Union Pacific Railroad. and local farm roads and private drives	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Orchards and vineyards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and levees of the Sacramento River and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, railroads, roadways, and the town of Hood. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Hood.	Proposed intake facilities would introduce structures associated with the intake facility would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. Intake Work Area would convert agricultural lands to construction related facilities. These features would be visually discordant with the area’s existing characteristics. Proposed Intake Work Area would be restored after construction and not affect views. Perimeter landscaping would help to slightly reduce the appearance of changes.	Proposed intake structure, intake storage and electrical buildings, access roads, cranes, substations, and transmission lines may be seen in vista middleground views from Lambert and Russell Roads. Perimeter landscaping would help to slightly reduce the appearance of changes.	N/A	Project facilities at Intakes would include new lighting systems used during the course of normal operations in the area of Intakes 3 and 5.Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
Area surrounding pipeline/tunnel alignment Intake 5 to the proposed shaft site north of Lambert Road (includes cKOPs 81–88) and East-West transmission line alignment option	Foreground to middleground views from Lambert Road, Russell Road, and local farm roads and private drives; and I-5	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees and bushes along roadsides and near small farmstead buildings. Row crops, orchards, and vineyards also present. Flat terrain, combined with intervening large-form dense vegetation does not permit background views. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences and farmstead buildings, and vehicles on roadways.	Proposed intake facilities would introduce structures and prominent sunken or elevated landforms from tunnel work and RTM areas would be introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and other agricultural lands located within Intake disturbance area and above ground conveyance pipeline area would be removed. These features would be visually discordant with the area’s existing characteristics. Perimeter landscaping would help to slightly reduce the appearance of changes.	Proposed intake structure, pumping plant, access roads, and transmission lines may be seen in vista middleground views from Lambert and Russell Roads. Proposed shaft site and transmission lines would be visually prominent in vista foreground views from Lambert Road. Perimeter landscaping would help to slightly reduce the appearance of changes.	N/A	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intake 5. Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
CHE9, SR 160, and River Road from Intake 5 to Russell Road, off of River Road (includes cKOPs 41–61 and 76)	Foreground to middleground views from CHE9, SR 160, and River Road	Highway travelers experience views of large, mature trees and shrubs along roadside, wide meandering waters of the Sacramento River, occasional expansive views of mature ornamental tree groupings, row crops, vineyards, tree orchards, and other agricultural land located on nearby properties. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Elk and Steamboat Sloughs; and more angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways. Higher intensity lighting is present in more developed areas such as Courtland and Paintersville.	These project features would be visible from these segments of the roadways, but would be located at such a distance that they would not dominate the view. Intake 5 would be visible on approach from SR 160.	No project features would be immediately visible in foreground and middleground	Roadway realignment of State Scenic Highway near intake and introduction of large landform seen on approach to intake. Mature ornamental tree groupings and orchard trees located within Intake disturbance area would be removed or considerably altered relative to existing conditions, to be replaced by project-related facilities. Some ornamental vegetation and agricultural land would be removed and/or altered to build proposed permanent access road. Proposed intake structures, sedimentation basins, storage and electrical buildings, access roads, cranes, substation, fencing and perimeter landscaping would be visually prominent in views from SR 160 seen on approach to Intake 5.	Project facilities in Intake disturbance area would include new lighting systems used during the course of normal operations in the area of Intake 5. Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
Area surrounding pipeline/tunnel alignment from the proposed shaft site north of Lambert Road to Intermediate Forebay (includes cKOPs 81–88, 114–116, and 257)	Foreground to middleground views from Lambert Road, Herzog Road, Russell Road, Dierssen Road, and Twin Cities Road; CH E13 and I-5; and the Stone Lakes National Wildlife Refuge and Cosumnes River Preserve	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. Curvilinear form and wide meandering waters of the Sacramento River; curvilinear form and marshy areas associated with Snodgrass Slough; and more angular irrigation and drainage ditches also define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area’s background features. Riparian and wetland vegetation covers portions of the Stone Lakes National Wildlife Refuge and Cosumnes River Preserve Areas. Human made features in the area include levees, farmstead residences, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles on roadways.	Proposed RTM areas would be new visually prominent elevated landforms introduced to a landscape that is currently predominantly flat. Proposed forebay embankments north of Twin Cities Road would be new visually dominant feature. Mature ornamental tree groupings and agricultural lands located within proposed forebay, RTM, and work areas would be removed. New transmission lines would be visible near by the forebay from Twin Cities Road. These features would be visually discordant with the area’s existing characteristics.	Proposed forebay, RTM areas, and transmission lines would be visually prominent in vista foreground views from Twin Cities Road.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable
Area surrounding pipeline/tunnel alignment from Mokelumne River to Potato Slough (includes cKOPs 98, 239, and 258)	Foreground to middleground views from Staten Island levee; West Walnut Grove Road, North Staten Island Road, Gas Wells Road, and SR 12; other nearby roads in the vicinity; Staten Island Sandhill Crane Habitat; and Tower Park Marina Resort, Lighthouse Marina Restaurant and Resort, and Pirates Lair Marina.	While travelling along roadways, expansive views of flat, large agricultural areas, including mature ornamental tree groupings, row crops, vineyards, and orchards. The curvilinear form and marshy areas associated with the North and South Mokelumne River and Potato Slough and straight and angular irrigation and drainage ditches define the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area’s background features. Human made features in the area include levees, farmstead residences, transmission lines, communication towers, marina, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, trains, and vehicles on roadways.	Proposed safe haven work areas, concrete batch plants, and fuel stations would be restored after construction and not affect views. Proposed shaft sites would be new visually prominent elevated landforms introduced to a landscape that is currently predominantly flat. Mature ornamental tree groupings and agricultural lands located within proposed shaft site and RTM areas would be removed. shaft sites and RTM areas would result in a considerable loss of agricultural land and change in landform compared to existing conditions. New interchange along SR 12 would introduced raised transportation structure in flat landscape. New transmission lines would be visible near RTM area from SR 12. These features would be visually discordant with the area’s existing characteristics.	Proposed safe haven work areas, concrete batch plants, and fuel stations would be restored after construction and not affect views. Proposed shaft sites, RTM areas, and transmission lines would visible in vista foreground and middleground views from West Walnut Grove Road, North Staten Island Road, Gas Wells Road, and SR 12. New interchange bridge over SR 12 would limit westbound views toward Mount Diablo.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Moderately Noticeable

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
Area surrounding pipeline/tunnel alignment from Potato Slough to Old River (includes cKOP 254–255)	Foreground to middleground views fromBouldin Island levee, Kettleman Lane, Venice Island Levee, Mandeville Island levee, Bacon Island levee, Bacon Island Road, Woodward Island levee, and Victoria Island levee, the Burlington Northern Santa Fe Railroad, and SR 4.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along levees and roadsides. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways. The curvilinear form and marshy areas of North Mokelumne River, South Mokelumne River, Potato Slough, San Joaquin River, Connection Slough, Middle River, and Old River; and the straight form of Woodward Canal defines the landscape. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, passing trains, and vehicles on roadways.	Proposed safe haven work areas on Venice and Bacon Islands would be restored after construction and not affect views. Raised shaft sites on Mandeville and Bacon Islands would be visible from island roadways. Shaft site north of SR 4 would be visible in foreground views available from SR 4. New transmission lines would be visible along tunnel alignment. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the following locations: Mandeville Island connection to S. Bacon Island Road for Mandeville Island shaft site N. Bacon Island Road connection to shaft site west of Middle River	Raised shaft sites on Mandeville and Bacon Islands would be visible from island roadways. Shaft site north of SR 4 would be visible in vista foreground available from SR 4. New transmission lines would be visible along tunnel alignment in vista views.	N/A	Negligible	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Moderately Noticeable

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
Area surrounding pipeline/tunnel alignment from Woodward Canal to Byron Highway (includes cKOPs 99, 100–112, and 197–200)	Foreground to middleground views from Clifton Court Road, Western Farms Ranch Road, Herdlyn Road, Lindemann Road, Kelso Road, Bruns Road, Byron Hot Springs Road, and Byron Highway/CH J4;; Lazy M Marina, River’s End Marina & Boat Storage, and Kings Island. Background views from the foothills, Bethany Reservoir State Recreation Area, and California Aqueduct Bikeway.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways in some locations. California Aqueduct and Central Valley Project Canal visible from highway. The curvilinear form and marshy areas of Old River and Italian Slough; straight form of Woodward Canal, North Victoria Canal and Victoria Canal; and open water of the Clifton Court Forebay defines the landscape. Angular irrigation and drainage ditches also define the landscape. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, roadways, and California Aqueduct infrastructure. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, industrial areas, boats, vehicles on roadways, and forebay facilities. The River’s End Marina & Boat Storage is located at junction of Lindeman Road, Central Valley Project Canal, and Old River and includes some residences and businesses. Lazy M Marina is located at on Italian Slough and is used for boat launching and storing.	Proposed RTM area west of Clifton Court Forebay would considerably alter character of area through introduction of a large new elevated landform to a landscape that is currently predominantly flat. Until perimeter landscaping matures, pumping plant facility would considerably alter character of area through introduction of a large new elevated landform and large-scale industrial facilities when seen from Clifton Court Road, Old River, and West Canal. Proposed permanent access roads would minimally alter area’s visual character due to presence of existing paved and unpaved roads in the area and includes the SR 4 connection to shaft site north of the highway. Expanded Clifton Court Forebay would introduce a large scale water body into view from Lindemann Road. Expanded Clifton Court Forebay would introduce more embankments into view from Byron Highway, North Bruns Way, Bruns Road, and Mountain House Road. Features would not be very visible from north of Camino Diablo Road, including Discovery Bay.	Expanded Clifton Court Forebay would introduce a large scale water body into vista from Lindemann Road. Dark pumping plant buildings and landscaping at Clifton Court Forebay would blend in background vista views available from the foothills, Bethany Reservoir State Recreation Area, and California Aqueduct Bikeway but would be prominent focal point in foreground vista views from Clifton Court Road.	N/A	Project facilities in pumping plant disturbance area would include new lighting systems used during the course of normal operations in the area of the pumping plant. Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: Low to Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Very Noticeable

Table 17D-4. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Quality and Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change from Light and Glare	Project’s Overall Effect on Viewers ²
Travelling by boat on waterways surrounding the alternative alignment from Mokelumne River to Clifton Court Forebay	Foreground to middleground views from waterways to island levees	Narrow riparian vegetation strips along levees with occasional islands within the waterways. Riparian vegetation is primarily herbaceous. The curvilinear form and marshy areas rivers and sloughs; and straight cuts and canals defines the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, boats, and vehicles on roadways.	Proposed shaft sites and RTM areas could alter character of area through introduction of a large new elevated landform to a landscape that is currently predominantly flat if visible over island levees. Until perimeter landscaping matures, pumping plant facility could alter character of area through introduction of a large new elevated landform and large-scale industrial facilities when seen from Old River and West Canal, if visible over island levees.	Proposed shaft sites and RTM areas could alter vistas through introduction of a large new elevated landform to a landscape that is currently predominantly flat if visible over island levees. It is not likely that these features would obscure vistas, but only introduce a raised landform into them. Until perimeter landscaping matures, pumping plant facility could alter character of area through introduction of a large new elevated landform and large-scale industrial facilities when seen in vista views from Old River and West Canal, if visible over island levees.	N/A	Project facilities in pumping plant disturbance area would include new lighting systems used during the course of normal operations in the area of the pumping plant. Perimeter landscaping would help to slightly reduce the effects of light and glare.	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Subordinate Project’s Overall Effect: Very Noticeable
Head of Old River at San Joaquin River	Foreground to background views of surrounding area from Upper Roberts Island and Stewarts Tract.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin and Old Rivers, more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. The view includes an impressive, prominent view of Mount Diablo in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with boats traveling on the San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across Old River and alter area’s existing character by introducing a large-scale industrial structure that is visually discordant with the area’s existing characteristics. Operable barrier would have a boat lock to permit continued boat access to the San Joaquin River and Old River. Any tunnel work area associated with construction of the barrier would also alter landforms by creating prominent sunken or elevated features. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed operable barrier would require elevated security lighting	Landscape Sensitivity Level: Moderate Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Source: Data compiled by ICF in 2013.

1 **Table 17D-5. Separate Corridors Alternative (9)**

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
SR 160 and River Road from cKOP 201 to the edges of Walnut Grove and Locke (includes cKOPs 201–205)	Foreground to middleground views of surrounding area from South River Road, River Road; SR 160 and CH E13; and other nearby roads in the vicinity.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides and near small farmstead buildings. Orchards and row crops are also present. Curvilinear form and wide meandering waters of Sacramento River, contrasted by more irregularly shaped thick vegetation, also defines landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in area include levees, residences, boat slips, communication towers, warehouse/industrial buildings, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles traveling on roadways.	The proposed project features would be visible from SR 160 and River Road and visually discordant with the area's existing agricultural visual character. These features would considerably alter area's existing character by removing orchards and riparian vegetation, creating prominent sunken or elevated landforms from the tunnel work areas, creating a connection channel, and a bridge and the operable barrier. The proposed moderately sized bridge would somewhat alter the area's existing visual character, introducing a structure that would not be visually discordant with the area's existing characteristics, given that moderately sized bridges are common in the area. The operable barrier would be more discordant with the area's visual character. New transmission lines would be visible along River Road.	N/A	Mature ornamental tree groupings and orchard trees would be removed to construct the channel connection, bridge, and operable barrier and would considerably alter existing conditions.	Project facilities would include new lighting systems used during the course of normal operations	Landscape Sensitivity Level: High Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
Locke and Walnut Grove to cKOP 235 (includes cKOPs 206–238)	Foreground to middleground views of surrounding area from South River Road, River Road, Locke Road, Levee Road, Mealer Lane, 2 nd Street, Center Street, 4 th Street, Theater Street, Isleton Road, Andrus Island Road, Walnut Grove-Thornton Road, and Race Track Road; SR 160, CH E13, and CH J11; other nearby roads in the vicinity; Boathouse Marina, Dagmar's Landing, Walnut Grove Marina, Delta Meadows State Park, and the Locke Boarding House.	Rural residential communities and the curvilinear form of the Sacramento River, Georgiana Slough, and Snodgrass Slough; the straight Meadows Slough and Delta Cross Channel; and more angular irrigation and drainage ditches also define the landscape. Views of Walnut Grove and historic town of Locke dominate the landscape. Flat, expansive agricultural terrain and orchards, occasionally dotted with large, mature trees are visible along roadsides and near small farmstead buildings to the south of Locke and Walnut Grove. Human made features in area include levees, flood control features, residences, warehouse/industrial buildings, bridges, marinas, transmission lines, communication towers, and roadways. The local area has nighttime lighting associated with downtown areas of Locke and Walnut Grove, residences, boats, and vehicles traveling on roadways and bridges.	The proposed project features would be visible from SR 160 and from River Road and would be visually discordant with the area's existing rural residential visual character. The operable barrier would not be very discordant with the area's visual character because they would be built where there are existing bridges. The fish screen intakes would considerably alter area's existing character by removing riparian vegetation along the Walnut Grove waterfront, introducing a large-scale industrial structure that would be visually discordant with the area's existing characteristics. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in vista foreground and middleground views. Water levels in the Delta Cross Channel and Georgiana Slough would also be visibly higher. New transmission lines would be visible along River Road.	N/A.	The fish screen intakes and transmission lines would considerably alter views from SR 160 by removing riparian vegetation along the Walnut Grove waterfront, introducing a large-scale industrial structure that would be visually discordant with the area's existing characteristics.	Proposed fish screen and transmission lines would be new visually prominent feature in landscape, with elevated security lighting at and surrounding the facility used during the course of normal operations or in the area of the bridge	Landscape Sensitivity Level: High Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Terminus of Levee Road just north of the confluence of Delta Cross Channel with Snodgrass Slough (includes cKOP 215)	Foreground to middleground views of surrounding area from Levee Road and River Road; and CH E13.	Characterized by flat levee road, straight Delta Cross Channel terminus, meandering waterway Snodgrass Slough and surrounding marsh and agricultural lands. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Area is generally dark with some subdued lighting associated with existing residences and farmstead buildings. Human made features in area include levees, flood control features, residences, warehouse/industrial buildings, bridges, transmission lines, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, the town of Walnut Grove, boats, and vehicles traveling on roadways.	The proposed project features would be visible from Levee Road and would be visually discordant with the area's existing agricultural visual character. These features would considerably alter area's existing character by removing vegetation on undeveloped land and riparian vegetation, creating prominent sunken or elevated landforms from the tunnel work areas, and the operable barrier. The operable barrier would be more discordant with the area's visual character. Proposed access road would be visible but not prominent in foreground and middleground views. Water levels in the Delta Cross Channel would also be visibly higher. New transmission lines would be visible along River Road and east of Snodgrass Slough.	N/A	N/A	Project facilities would include new lighting systems used during the course of normal operations	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Co-dominant Project's Overall Effect: Noticeable
Snodgrass Slough at Mokelumne River just south of Twin Cities Road and I-5 Interchange	Foreground to middleground views of surrounding area from Twin Cities Road; and I-5 and CH E13; Cosumnes River Preserve, Stone Lakes National Wildlife Refuge, and Delta Meadows State Park.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides, riparian areas, and near small farmstead buildings. Agricultural areas include row crops, vineyards, and orchards. The curvilinear form of Snodgrass Slough and Mokelumne River also define landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in area include levees, residences, bridges, transmission lines, communication towers, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, and vehicles traveling on roadways.	The proposed project features would not be very visible from I-5 or Twin Cities Road. They would be visible from Levee Road and would be visually discordant with the area's existing visual character. The operable barrier would be discordant with the area's visual character because it would be built where there are no such facilities and would limit boat travel ways. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses existing access ways. New transmission lines would be visible in the area.	N/A	N/A	Additional information needed regarding lighting at operable barriers	Landscape Sensitivity Level: Low Project's Visual Dominance: Co-Dominant Project's Overall Effect: Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Confluence of Threemile Slough with Sacramento River at Brannan Island State Recreation Area (includes cKOPs 242–253)	Foreground to middleground views of surrounding area from Sherman Island East Levee Road; SR 160; Brannan Island State Recreation Area and Outrigger Marina.	Flat, expansive agricultural terrain dotted with large, mature trees. Recreational land uses present are associated Brennan Island State Recreation Area and Outrigger Marina. Recreational features in close proximity to operable barrier and tunnel work area include the recreational vehicle rally site and campgrounds. View also characterized by curvilinear form of Sacramento River and Threemile Slough, fluid nature of water, and riverine and riparian vegetation. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in area include levees, residences, bridges, transmission lines, communication towers, a marina, park and campground infrastructure, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, farmstead buildings, boats, and vehicles traveling on roadways.	The large scale of the proposed operable barrier would span across almost the entire view and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access from Threemile Slough to the Sacramento River. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it slightly modifies existing access ways. Short segment of new transmission lines would be visible in the area.	Proposed operable barrier and tunnel works area would be visually prominent in vista foreground and middleground views	N/A		Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
Confluence of Fisherman's Cut with San Joaquin River	Foreground to middleground views of surrounding area from Twitchell Island Levee, Bradford Island Levee, and Webb Tract Levee.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin River; straight Fisherman's Cut; more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. Several rural or recreational residences with boat slips are located along Fisherman's Cut. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in area include levees, residences, and boat slips. The local area is generally dark with lighting associated with scattered existing residences and boats.	The large scale of the proposed operable barrier would span across Fisherman's Cut and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access to San Joaquin River from the north end of Fisherman's Cut. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features.	N/A	N/A		Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Head of Old River confluence with San Joaquin River	Foreground to background views of surrounding area from Upper Roberts Island and Stewarts Tract.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of San Joaquin and Old Rivers, more angular irrigation and drainage ditches, fluid nature of water, and riverine and riparian vegetation also define the landscape. The view includes an impressive, prominent view of Mount Diablo in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with boats traveling on the San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across Old River and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access to San Joaquin River from the northeastern end of Old River. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed operable barrier would require elevated security lighting	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable
Confluence of Connection Slough with Middle River	Foreground to middleground views of surrounding area from Mandeville Island Levee, South Bacon Island Levee, and McDonald Island Levee.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. View also characterized by curvilinear form of Middle River and Connection Slough, more angular irrigation and drainage ditches, fluid nature of water fluid nature of water, and riverine vegetation. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. The view includes impressive, prominent view of Mount Diablo and other East Bay Hills in background. Human made features in area include levees and roadways. The local area is generally dark with lighting associated with scattered existing residences, boats, and vehicles on roadways.	The large scale of the proposed operable barrier would span across Middle River and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access from Middle River to Connection Slough and Franks Tract State Recreation Area, beyond and to the west. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses an existing access way.	N/A	N/A	Proposed tunnel work area may require security lighting Proposed tunnel work area may require security lighting. Dredging/island removal could involve nighttime activities with construction lighting.	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Middle River at confluence with Empire Cut to SR 4 bridge over Middle River (includes cKOPs 254 and 255)	Foreground to background views of surrounding area from Bacon Island levee, Bacon Island Road, Woodward Island levee, and Victoria Island levee; the Burlington Northern Santa Fe Railroad; Rindge School, Bull Frog Landing Marina, and Union Point Marina.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees. Row crops and vineyards are present. View also characterized by curvilinear form of Middle River and Old River, fluid nature of water, and riverine vegetation and linear landscape features such as levees, the railway, Empire Cut, Woodward Canal, North Victoria Canal, Victoria Canal, and North Canal; and the more angular form of Trapper Slough and irrigation and drainage ditches defines the landscape. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features from some locations. The view includes impressive, prominent view of Mount Diablo and other East Bay Hills in background. Human made features in area include levees, scattered residences, marinas, a school, transmission lines, and roadways. The local area is generally dark with lighting associated with scattered existing residences, marinas, a school, the ferry at West Bacon Island Road, other boats, and vehicles on roadways.	The large scale of the proposed operable barriers would span across Old River and Woodward Canal and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access from Middle River to Old River, Woodward Canal, and Franks Tract State Recreation Area, beyond and to the west. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses an existing access way. Dredging/island would remove relatively small amount of riverine vegetation and removal or the islands would result in a considerable increase in visible water surface area compared to existing conditions and affect the W. Bacon Island Road ferry. This may affect views from Bullfrog Landing Marina and river-based residences located on nearby islands.	N/A	N/A	Proposed tunnel work area may require security lighting. Dredging/island removal could involve nighttime activities with construction lighting.	Landscape Sensitivity Level: Moderate Project's Visual Dominance: Dominant Project's Overall Effect: Very Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
From SR 4 following along Victoria Canal to Clifton Court Forebay (includes cKOPs 99 and 100)	Foreground and middleground views of surrounding area from Victoria Island Levee, Roberts Island Levee, South Klein Road, West Klein Road, Bonetti Road, and Coney Island levee; SR 4; and Union Point Marina.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees, and row crops. View also characterized by curvilinear form of Middle River and Old River; straight form of Victoria Canal and North Canal; Angular form of irrigation and drainage ditches; fluid nature of water; and riverine vegetation. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features in some locations. The view includes impressive, prominent view of Mount Diablo and other East Bay Hills in background. Human made features in area include levees, scattered residences, a marina, transmission lines, and roadways. The local area is generally dark with lighting associated with scattered existing residences, scattered industrial facilities, a marina, boats, vehicles on roadways.	The large scale of the proposed operable barriers would span across Middle River and, along with the pumping plant, would alter area's existing character by introducing large-scale industrial structures that are visually discordant with the area's existing characteristics. Operable barrier would prevent boat access from portions of Middle River to the northwest to portions to the southeast, just southeast of the SR 4 bridge. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses an existing access way. Dredging/island would remove relatively small amount of riverine vegetation and removal or the islands would result in a considerable increase in visible water surface area compared to existing conditions. Short segment of new transmission lines would be visible near new canal extension. New canal right-of-way with levee would result in a considerable landform change and increase of surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. Canal fill would result in an increase of land surface over existing conditions.	N/A	N/A	Proposed tunnel work area may require security lighting. Dredging/island removal could involve nighttime activities with construction lighting. Canal/canal levee would involve intensive security lighting elevated 30 feet above the surrounding area	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project’s Overall Effect on Viewers
Southeast corner of Clifton Court Forebay to junction of Lindeman Road, Central Valley Project Canal, and Old River (includes cKOPs 107–111)	Foreground to middleground views of surrounding area from Herdlyn Road, Lindemann Road, Kelso Road, and Byron Highway; SR 4 and CH J4; and River’s End Marina.	Flat, expansive primarily agricultural terrain, occasionally dotted with large, mature trees along roadsides. Flat terrain, combined with intervening large-form dense vegetation does not permit background views from roadways in some locations. The curvilinear form and marshy areas of Old River; straight form of Victoria Canal, West Canal, Grant Line Canal, and Fabian and Bell Canal; the angular form of Central Valley Project Canal; and open water of the Clifton Court Forebay defines the landscape. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, and roadways. The local area is generally dark with some subdued lighting associated with existing residences, marinas, farmstead buildings, industrial areas, boats, and vehicles on roadways. The River’s End Marina is located at junction of Lindeman Road, Central Valley Project Canal, and Old River and includes some residences and businesses.	New canal right-of-way with levee would result in a considerable landform change and increase of surface water area compared to existing conditions and would introduce a large industrial scale structure to the area. Canal fill would result in an increase of land surface over existing conditions. The large scale of the proposed canal, control structure crossing the canal, and bridge across Clifton Court Forebay spillway into the new canal would alter area’s existing character by introducing large-scale industrial structures that are visually discordant with the area’s existing characteristics. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses an existing access way. Island dredging and fill would remove buildings, boat slips, and vegetation to create a landform across the Central Valley Project Canal and Old River that prohibits access to West Canal and the Victoria Canal area. This would affect views from Hammer Island, Rivers End Marina and Storage area, and other river-based residences located nearby. Short segment of new transmission lines would be visible west of new canal extension.	Canal/canal levee south of Clifton Court Forebay would introduce a large feature into vista from Lindemann Road. Spoil/borrow area may be visually prominent from Lindemann Road. Channel realignment at Hammer Island would open vistas available from Lindemann Road.	N/A	Proposed tunnel work area may require security lighting. Dredging/island removal could involve nighttime activities with construction lighting. Canal/canal levee would involve intensive security lighting elevated 30 feet above the surrounding area	Landscape Sensitivity Level: High Project’s Visual Dominance: Dominant Project’s Overall Effect: Very Noticeable

Table 17D-5. Continued

Viewing Location	Affected Viewshed	Existing Characteristics	Potential Project Related Change to Visual Character	Project Related Change to Vista	Project Related Change to a Scenic Roadway	Project Related Change to Light and Glare	Project's Overall Effect on Viewers
Byron Highway from Clifton Court Road to Lindeman Road (includes cKOPs 104–106)	Foreground to middleground views of surrounding area from Byron Highway, Clifton Court Road, Herdlyn Road, Mountain House Road, Byron-Bethany Road, Lindemann Road, and Kelso Road; CH J4; and Union Pacific Railroad.	Large, flat agricultural areas to north, in close proximity to hulking water conveyance features associated with Clifton Court Forebay, and south of highway. California Aqueduct and Central Valley Project Canal visible from highway. Transmission lines and a raised railroad bed on berm, running parallel to the northeast of the highway, are prominent in the immediate foreground. Some undulating elevated topography is visible in the foreground and Mount Diablo and the Black Hills are visible in the middleground and background. Angular irrigation and drainage ditches also define the landscape. Human made features in the area include levees, farmstead residences, communication towers, transmission lines, railroads, roadways, and California Aqueduct infrastructure. The local area is generally dark with lighting associated with residences, boats, trains, vehicles, and forebay facilities.	Loss of agricultural area to accommodate the proposed canal. Proposed tunnel work area would considerably alter character of area through introduction of a large new sunken or elevated landform to a landscape that is currently predominantly flat. Island dredging and fill would remove buildings, boat slips, and vegetation to create a landform across the Central Valley Project Canal and Old River. Project facilities would considerably alter area's existing character by introducing large-scale industrial structures and new large landforms that are visually discordant with the area's existing characteristics.	N/A	N/A	Dredging/island removal could involve nighttime activities with construction lighting. Canal/canal levee would involve intensive security lighting elevated 30 feet above the surrounding area	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable
Confluence of Old River with San Joaquin River northwest of I-5 and Lathrop	Foreground to middleground views of surrounding area views from Old River Levees, San Joaquin River Levees, and Cohen Road.	Flat, expansive primarily agricultural terrain including row crops. View also characterized by curvilinear form of San Joaquin and Old Rivers, fluid nature of water, and riverine and riparian vegetation. Flat terrain, combined with intervening large-form dense vegetation does not permit views of area's background features. Human made features in the area include levees, farmstead residences, suburban development, and roadways. The suburban development of Lathrop and scattered residences provide subdued nighttime lighting from the east, otherwise generally dark with lighting associated with boats traveling near confluence of San Joaquin River and Old River.	The large scale of the proposed operable barrier would span across San Joaquin River and alter area's existing character by introducing a large-scale industrial structure that is visually discordant with the area's existing characteristics. Operable barrier would prevent boat access to San Joaquin River near its confluence with Old River. Tunnel work areas would also alter landforms by creating prominent sunken or elevated features. Proposed access road would be visible but not prominent in foreground and middleground views because it uses an existing access way. Short segment of new transmission lines would be visible in the area.	N/A	N/A	Proposed tunnel work area may require security lighting.	Landscape Sensitivity Level: Low Project's Visual Dominance: Dominant Project's Overall Effect: Noticeable

Source: Data compiled by DHCCP in 2010 and revised by ICF in 2011 and 2012.
RTM = reusable tunnel material.

Appendix 17E

Permanent Features

Table 17E-1. Permanent Features^a Remaining after Construction is Complete that Would Result in Adverse Visual Effects on Foreground Views^b

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Intake 1 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 3, 5, 6A, 6B	Recreationists	<u>Water-based^d:</u> Sacramento River, within post miles (PM ^e) for SR 160 <u>Cyclists:</u> SR 160: PM 31–32.75 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 31–32.75 CH E9, within PM opposite SR 160	
		Residences and Businesses	Along SR 160: PM 31–32.75 Along CH E9, within PM opposite SR 160 Southeast of Intake 1 and north of spoil/borrow area	
Intake W1 with pumping plant and 69 kV transmission lines, including realignment of CH E9 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160: PM 31.25–32.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 31.25–32.25 CH E9, within PM opposite SR 160	
		Residences and Businesses	Along SR 160: PM 31.25–32.25 Along CH E9, within PM opposite SR 160 Southeast of Intake 1 and north of spoil/borrow area	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Intake 2 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 3, 6A, 6B, 7, 8	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160: PM 29.75–30.5 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: 29.75–30.5 CH E9, within PM opposite SR 160 Scribner Road: SR 160 to end	
		Residences and Businesses	Along SR 160: 29.75–30.5 Along CH E9, within PM opposite SR 160 Along Scribner Road: SR 160 to end	
Intake 2 with sedimentation basins and 69 kV transmission lines, including realignment of SR 160 (Modified Pipeline/Tunnel)	4	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160: PM 29.75–30.5 CH E9, within PM opposite SR 160	
		Roadway Travelers	SR 160: 29.75–30.5 CH E9, within PM opposite SR 160 Scribner Road: SR 160 to end	
		Residences and Businesses	Along SR 160: 29.75–30.5 Along CH E9, within PM opposite SR 160 Along Scribner Road: SR 160 to end	
Intake W2 with pumping plant and 69 kV transmission lines, including realignment of CH E9 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160: PM 29.75–30.5 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: 29.75–30.5 CH E9, within PM opposite SR 160 Scribner Road: SR 160 to end	
		Residences and Businesses	Along SR 160: 29.75–30.5 Along CH E9, within PM opposite SR 160	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Intake 3 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 6A, 6B, 7, 8	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 26.75–27.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 26.75–27.25 CH E9, within PM opposite SR 160 <i>Northern end of 3rd, 4th, 5th, and 8th Streets^f</i> <i>Hood Franklin Road: 8th Street to Southern Pacific Railroad</i>	
		Residences and Businesses	Along SR 160: PM 26.75–27.25 Along CH E9, within PM opposite SR 160 <i>Hood: Northern end of 3rd, 4th, 5th, and 8th Streets and northern end of mobile home park</i>	
Intake 3 with sedimentation basins and 69 kV transmission lines, including realignment of SR 160 (Modified Pipeline/Tunnel)	4	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 26.75–27.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 26.75–27.25 CH E9, within PM opposite SR 160 <i>Northern end of 3rd, 4th, 5th, and 8th Streets^f</i> <i>Hood Franklin Road: 8th Street to Southern Pacific Railroad</i>	
		Residences and Businesses	Along SR 160: PM 26.75–27.25 Along CH E9, within PM opposite SR 160 <i>Hood: Northern end of 3rd, 4th, 5th, and 8th Streets and northern end of mobile home park</i>	
Intake W3 with pumping plant and 69 kV transmission lines, including realignment of CH E9 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 Clarksburg fishing access opposite SR 160 PM 27.25 <u>Cyclists:</u> SR 160 PM 26.5–28 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 26.5–28 CH E9, within PM opposite SR 160	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	Along SR 160: PM 26.5–28 Along CH E9, within PM opposite SR 160	
Intake 4 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 6A, 6B	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 25.25–26.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 25.25–26.25 CH E9, within PM opposite SR 160 Hood Franklin Road	
		Residences and Businesses	Along SR 160: PM 25.25–26.25 Along CH E9, within PM opposite SR 160 Along west side of 3 rd Street in Hood	
Intake W4 with pumping plant and 69 kV transmission lines, including realignment of CH E9 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 24–25.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 24–25.25 CH E9, within PM opposite SR 160	
		Residences and Businesses	Along SR 160: PM 24–25.25 Along CH E9, within PM opposite SR 160 Along west side of 3 rd Street in Hood	
Intake 5 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	1A, 4, 6A, 7, 8	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 24–25.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 24–25.25 CH E9, within PM opposite SR 160	
		Residences and Businesses	Along SR 160: PM 24–25.25 Along CH E9, within PM opposite SR 160 Along west side of 3 rd Street in Hood	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Intake 5 with sedimentation basins and 69 kV transmission lines, including realignment of SR 160 (Modified Pipeline/Tunnel)	4	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 24–25.25 CH E9, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 24–25.25 CH E9, within PM opposite SR 160	
		Residences and Businesses	Along SR 160: PM 24–25.25 Along CH E9, within PM opposite SR 160 Along west side of 3 rd Street in Hood	
Intake W5 with pumping plant and 69 kV transmission lines, including realignment of CH E9 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Water-based:</u> Sacramento River, opposite SR 160 PM 22.5–24.25 <u>Cyclists:</u> CH E9, opposite SR 160 PM 22.5–24.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	CH E9, opposite SR 160 PM 22.5–24.25	
		Residences and Businesses	Along CH E9, opposite SR 160 PM 22.5–24.25 Business along Randall Island Road	
Intake 6 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	2A, 2B	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 18–19.5 River Road, opposite SR 160 PM 18–19.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 18–19.5 River Road, opposite SR 160 PM 18–19.25	
		Residences and Businesses	Along SR 160: PM 18–19.5 River Road, opposite SR 160 PM 18–19.25	
Intake 7 with pumping plant and 69 kV transmission lines, including realignment of SR 160 (Pipeline/Tunnel and East Alignment)	2A, 2B	Recreationists	<u>Water-based:</u> Sacramento River, within PM for SR 160 <u>Cyclists:</u> SR 160 PM 16.75–18.25 River Road, within PM opposite SR 160	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project
		Roadway Travelers	SR 160: PM 16.75–18.25 River Road, within PM opposite SR 160	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	Along SR 160: PM 16.75–18.25 River Road, within PM opposite SR 160	landscaping plan
Intermediate Forebay with pumping plant and 69 kV transmission lines (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists, Runners, Pedestrians:</u> SR 160 PM 24.25–25.77 Lambert Road <u>Water-based:</u> Elk Slough and Snodgrass Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160: PM 24.25–25.77 Lambert Road	
		Residences and Businesses	Along SR 160: PM 24.25–25.77	
Intermediate Forebay with outlet structure and 69 kV transmission lines (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists, Runners, Pedestrians:</u> Twin Cities Road <u>Water-based:</u> Snodgrass Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Twin Cities Road	
		Residences and Businesses	South of Twin Cities Road	
Byron Tract Forebay (East) with Control Structures (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 3, 5, 6A, 6B, 7, 8	Recreationists	<u>Cyclists, Runners, Pedestrians:</u> Lindemann Road Herdlyn Road Byron Highway from North Bruns Way to Mountain House Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Lindemann Road Herdlyn Road Byron Highway from North Bruns Way to Mountain House	
		Residences and Businesses	Lindemann Road, northern portion	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Expanded Clifton Court Forebay with Drive Shafts, Pumping Plant, and 230 and 500 kV transmission lines (Modified Pipeline/Tunnel)	4	Recreationists	<u>Cyclists, Runners, Pedestrians:</u> Lindemann Road Herdlyn Road Byron Highway from North Bruns Way to Mountain House Road Clifton Court Road near the forebay	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Lindemann Road Herdlyn Road Byron Highway from Bruns Road to Mountain House Clifton Court Road near the forebay Water based: Old River West Canal	
		Residences and Businesses	Lindemann Road, northern portion Kings Island, off of Clifton Court Road	
Byron Tract Forebay (West) with Control Structures (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Clifton Court Road Herdlyn Road Mountain House Road Byron Highway from Clifton Court Road to Mountain House Road <u>Resorts:</u> Lazy M Marina on Clifton Court Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Clifton Court Road Herdlyn Road Mountain House Road Byron Highway from Clifton Court Road to Mountain House Road	
		Residences and Businesses	Lazy M Marina on Clifton Court Road Residence on North Bruns Way Residence or business on Bruns Way	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Spoil/Borrow Area south of Intake 1 (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 160 PM 29.75–31	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160 PM 29.75–31	
		Residences and Businesses	Along SR 160 PM 29.75–31 Southeast of Intake 1 and north of spoil/borrow area along Scribner Road, near SR 160 intersection and at end of road South of Scribner Road, near construction shaft site	
Spoil/Borrow Area south of Intermediate Forebay (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 160 PM 24.25–25.77 Lambert Road, Elk Slough, and Snodgrass Slough	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160: PM 24.25–25.77 Lambert Road, Elk Slough, and Snodgrass Slough	
		Residences and Businesses	Along SR 160: PM 24.25–25.77	
Spoil/Borrow Area southwest of Byron Highway (Pipeline/Tunnel and East Alignment)	1A, 1B, 2A, 2B, 3, 5, 6A, 6B, 7, 8	Recreationists	Not anticipated within foreground	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Byron Highway, Bruns Road to California Aqueduct	
		Residences and Businesses	Residence along Byron Highway and California Aqueduct Businesses on Bruns Road (Banks Pumping Plant) and Kelso Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Operable Barrier on Head of Old River (Pipeline/Tunnel Alignment and Modified Pipeline/Tunnel Alignment)	2A, 2B, 2C, 4	Recreationists	<u>Water-based:</u> <u>San Joaquin River</u> <u>Old River</u>	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Cohen Road	
		Residences and Businesses	None	
Spoil/Borrow Area south of Intake 1 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 160 PM 29.5–32.5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160 PM 29.5–32.5	
		Residences and Businesses	Along SR 160 PM 29.5–32.5 Southeast of Intake 1 and north of spoil/borrow area Along Scribner Road, near SR 160 intersection and at end of road South of Scribner Road, near construction shaft site	
Spoil/Borrow Area south of Intake 4 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 160 PM 24.75–25.75	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160 PM 24.75–25.75	
		Residences and Businesses	Along SR 160 PM 24.75–25.75	
Spoil/Borrow Area south of Intake 5 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 160 PM 24.75–23.5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160 PM 24.75–23.5 Lambert Road from intersection with Lambert Road to 90° bend in road	
		Residences and Businesses	Along SR 160 PM 24.75–23.5 Lambert Road from intersection with Lambert Road to 90° bend in road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Spoil/Borrow Areas north and south of Lambert Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Lambert Road, Snodgrass Slough to 1 mile west of I-5 Dierssen Road, western end to 0.5 mile west of I-5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Lambert Road, Snodgrass Slough to 1 mile west of I-5 Dierssen Road, western end to 0.5 mile west of I-5	
		Residences and Businesses	Residence south of Lambert Road, adjacent to and east of Snodgrass Slough Residence/farm north of Dierssen Road, 0.4 mile west of I-5 Residence north of Dierssen Road, 0.75 mile west of I-5 Farm south of Lambert Road, 1.4 miles west of I-5	
Spoil/Borrow Areas south of W. Walnut Grove Road to SR 12 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Blossom Road from West Walnut Grove Road south to Hog Slough West Peltier Road from intersection with Blossom Road to 1 mile east of intersection West Woodbridge Road, 0.5 mile on either side of bridge crossing SR 12 PM 8–8.5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Blossom Road from West Walnut Grove Road south to Hog Slough West Peltier Road from intersection with Blossom Road to 1 mile east of intersection West Woodbridge Road, 0.5 mile on either side of bridge crossing SR 12 PM 8–8.5	
		Residences and Businesses	Several residences and farms along Blossom Road between West Walnut Grove Road and Beaver Slough 3 residences and farms south of West Walnut Grove Road canal alignment and I-5 Farm on Hog Slough 0.4 mile west of canal alignment Farm north of SR 12 PM 8.25	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Spoil/Borrow Areas near King Island (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Eight Mile Road proposed canal bridge crossing to 1 mile west of I-5 East and west of Kings Island and North Rio Blanco Roads, north of West Eight Mile Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	West Eight Mile Road proposed canal bridge crossing to 1 mile west of I-5 East and west of Kings Island and North Rio Blanco Roads, north of West Eight Mile Road	
		Residences and Businesses	None with anticipated views	
Spoil/Borrow Areas Rindge Tract (East Alignment)	1B, 2B, 6B	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Large portions of West Rindge Road (private road)	
		Residences and Businesses	7–10 scattered residences and farms on Rindge Tract	
Spoil/Borrow Area San Joaquin River to SR 4 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Windmill Cove Road between North Holt Road and Vulcan Island East and west of North Holt Road from Windmill Cove Road to Holt North of West House Road from North Holt Road to eastern edge of tract North and south of West Jacobs Road, including West McDonald Road and Inland Drive North of SR 4 PM 8.75–10.25 <u>Resort Users:</u> Accessing on edges of Windmill Cove Resort & Marina	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Windmill Cove Road between North Holt Road and Vulcan Island East and west of North Holt Road from Windmill Cove Road to Holt North of West House Road from North Holt Road to eastern edge of tract North and south of West Jacobs Road, including West McDonald	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Road and Inland Drive North of SR 4 PM 8.75–10.25	
		Residences and Businesses	Residence/business at Windmill Cove Road and North Holt Road intersection 10–15 scattered residences and farms from 0.5 mile north of West House Road to SR 4	
Spoil/Borrow Area Roberts Island (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> South of SR 4 PM 4.75–7.5 East and west of South Inland Drive and West Kingston School Road, south of canal alignment East and west of South Tracy Boulevard, south of canal alignment	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	South of SR 4 PM 4.75–7.5 East and west of South Inland Drive, south of canal alignment East and west of South Tracy Boulevard, south of canal alignment	
		Residences and Businesses	Business south of SR 4 PM 4.75 Residence or farm west of South Tracy Boulevard and adjacent to and north of Middle River 6–8 residences and farms of South Inland Drive and West Kingston School Road	
Spoil/Borrow Area Union Island (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Clifton Court Road, western end to proposed bridge crossing over canal alignment and 0.5 mile west of Calpack Road to 1 mile west of South Tracy Boulevard Calpack Road from Clifton Court Road to West Klein Road West and South Klein Road from Calpack Road to canal alignment	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Clifton Court Road, western end to proposed bridge crossing over canal alignment and 0.5 mile west of Calpack Road to 1 mile west of South Tracy Boulevard Calpack Road from Clifton Court Road to West Klein Road West and South Klein Road from Calpack Road to canal alignment	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	Residence or business just south of western end of Clifton Court Road 1–2 residences or farms 2 miles west of South Tracy Boulevard 3 residences or farms along and east of Calpack Road Residence or business south of South Klein Road	
Spoil/Borrow Area northwest of Intake W1 (West Alignment)	1C, 2C, 6C	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	No public roads with anticipated views	
		Residences and Businesses	1 or 2 residences or farms to northwest	
Spoil/Borrow Area southwest of Intake W2 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> CH E9, opposite SR 160 PM 27–29.25	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	CH E9, opposite SR 160 27–29.25	
		Residences and Businesses	Several residences along CH E9 opposite SR 160 PM 27–29.25. Businesses may be present. Several residences along CR 144 and east of Elk Slough. Businesses may be present.	
Spoil/Borrow Area southwest of Intake W3 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> CH E9, opposite SR 160 PM 26–26.5 CR 144	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	CH E9, opposite SR 160 PM 26–26.5 CR 144	
		Residences and Businesses	Several residences along CH E9 opposite SR 160 PM 26–26.5. Businesses may be present. Several residences along CR 144 and east of Elk Slough. Businesses may be present.	
Spoil/Borrow Area along Jefferson Boulevard (SR 84) (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 2.75–7.25 South Netherlands Road from SR 84 to Waukeena Road Waukeena Road North Courtland Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	SR 84 PM 2.75–7.25 South Netherlands Road from SR 84 to Waukeena Road Waukeena Road North Courtland Road	
		Residences and Businesses	South Netherlands Road Jefferson Road PM 4.5–5 Waukeena Road CR 158 PM 4.2	
Spoil/Borrow Area northwest of CR 158 and Ryer Avenue (SR 84) (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 1.25–2.5 Alameda Avenue Mallard Road CR 150 CR 149 North Courtland Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 84 PM 1.25–2.5 Alameda Avenue Mallard Road CR 150 CR 149 North Courtland Road	
		Residences and Businesses	3 residences or farms SR 84 PM 1.25–1.75	
Spoil/Borrow Area west of Ryer Avenue (SR 84) (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM Solano 13.00–Yolo 0.75 CR 161 Oxford Road Sutter Road Holland Road <u>Resort Users:</u> Accessing Arrowhead Harbor Marina	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	SR 84 PM Solano 13.00–Yolo 0.75 CR 161 Oxford Road Sutter Road Holland Road	
		Residences and Businesses	1 residence or farm SR 84 PM Yolo 0.25	
Spoil/Borrow Area on Ryer Island (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 7.25–12 SR 220 PM 0–0.5 Ryer Road East Ryer Road Elevator Road Sutter Island Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 84 PM 7.25–12 SR 220 PM 0–0.5 Ryer Road East Ryer Road Elevator Road Sutter Island Road	
		Residences and Businesses	8 residences or farms SR 84 PM Solano 7.5–13 1 business SR 84 PM 9.75 2 residences or farms Holland Road 1 business Holland Road 1 residence or farm Ryer Road 3 residences or farms East Ryer Road 1 business East Ryer Road 3 residences or farms Sutter Island Road	
Spoil/Borrow Area north of Eagle Lane (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Eagle Lane from Byron Highway to proposed canal alignment Byron Highway from Eagle Lane to Delta Road Mountain View Drive and Ironhorse Road near intersection with Byron Highway	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	Eagle Lane from Byron Highway to proposed canal alignment Byron Highway from Eagle Lane to Delta Road Mountain View Drive and Ironhorse Road near intersection with Byron Highway	
		Residences and Businesses	8 residences on Eagle Lane 10 residences on Byron Highway 3 residences on Sunset Road	
Spoil/Borrow Area between Orwood Road and SR 4 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Orwood Road Byron Highway Balfour Road Bixler Road Chestnut Street near intersection with Byron Highway Fallmand Boulevard near intersection with Bixler Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Orwood Road Byron Highway Balfour Road Bixler Road Chestnut Street near intersection with Byron Highway Fallman Boulevard near intersection with Bixler Road	
		Residences and Businesses	2 businesses south of Orwood Road 2 residences east of Bixler Road, south of Orwood Road 2 residences east of Bixler Road 1 residence east of Byron Highway 1 residence west of Byron Highway, along Chestnut Street 7–10 residences south of Balfour Road	
Spoil/Borrow Area north of Byer Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Byron Highway Bixler Road Point of Timber Road SR 4 PM 43–45.75 Bypass Road, near intersection with SR 4 Byer Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	Byron Highway Bixler Road Point of Timber Road SR 4 PM 43–45.75 Bypass Road, near intersection with SR 4 Byer Road	
		Residences and Businesses	2 businesses and 2 residences/farms at SR 4 junction with Byron Highway 1 residence south of Point of Timber Road 7–10 residences, farms, and businesses west of Byron Highway, north of Bypass Road Clustering of residences, farms, and businesses west of Bixler Road 2–5 residences or businesses east and west of Bixler Road between SR 4 and Byer Road 1 school east of Bixler Road between SR 4 and Byer Road	
Spoil/Borrow Area around Byron Tract Forebay (West) (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Camino Diablo Road Western Farms Ranch Road Clifton Court Road Byron Highway from Clifton Court Road to Bruns Road <u>Resort Users:</u> Lazy M Marina on Clifton Court Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Camino Diablo Road Western Farms Ranch Road Clifton Court Road Byron Highway from Clifton Court Road to Bruns Road	
		Residences and Businesses	1–2 businesses at end of Camino Diablo Road Lazy M Marina on Clifton Court Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Reusable Tunnel Material Area north of Intake 2 (Pipeline/Tunnel Alignment and Modified Pipeline/Tunnel Alignment)	1A, 2A, 3, 4, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 160: PM 29.5–30.5 Scribner Road: SR 160 to end of road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 160: PM 29.5–30.5 Scribner Road: SR 160 to end	
		Residences and Businesses	Along SR 160: PM 29.5–30.5 At end of Scribner Road South of Scribner Road, near construction shaft site	
Reusable Tunnel Material Area south of Lambert Road (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Lambert Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Lambert Road	
		Residences and Businesses	South of Lambert Road	
Reusable Tunnel Material Area north of Dierssen Road (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Dierssen Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Dierssen Road	
		Residences and Businesses	North and south of Dierssen Road	
Reusable Tunnel Material Area north of Twin Cities Road (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Twin Cities Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Twin Cities Road	
		Residences and Businesses	North of Twin Cities Road	
Reusable Tunnel Material Area south of Twin Cities Road (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Twin Cities Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Twin Cities Road	
		Residences and Businesses	South of Twin Cities Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Reusable Tunnel Material Area east of Snodgrass Slough (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Twin Cities Road and Snodgrass Slough	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Twin Cities Road	
		Residences and Businesses	None	
Reusable Tunnel Material Area south of Isleton Road (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> Isleton Road, opposite SR 160 PM 12.25–13.5	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Isleton Road, opposite SR 160 PM 12.25–13.5	
		Residences and Businesses	Several residences along Isleton Road, opposite SR 160 PM 12.25–13.5	
Reusable Tunnel Material Area on Tyler Island (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> Tyler Island Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Tyler Island Road	
		Residences and Businesses	None	
Reusable Tunnel Material Area south of SR 12 (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Water-based:</u> Potentially boaters on Little Potato Slough and South Mokelumne River	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 12 PM 1.5–2.5	
		Residences and Businesses	None	
Reusable Tunnel Material Area on Bacon	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u>	Mitigation Measure AES-1c: Develop and implement a spoil/

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Island (Pipeline/Tunnel Alignment)			South Bacon Island Road	borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	South Bacon Island Road	
		Residences and Businesses	1 residence or farm to the northeast	
Reusable Tunnel Material Areas west of Clifton Court Forebay (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Byron Highway Western Farms Ranch Road Clifton Court Road <u>Resort Users:</u> <u>Lazy M Marina</u>	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Byron Highway Western Farms Ranch Road Clifton Court Road	
		Residences and Businesses	<u>Lazy M Marina</u> Near Byron Inn Café Along Byron Hot Springs Road, near intersection with Byron Highway	
Reusable Tunnel Material Area on Victoria Island (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 4 PM 0–1.75	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 4 PM 0–1.75	
		Residences and Businesses	1 farm to south of SR 4 PM 1.25	
Reusable Tunnel Material Area north of West Walnut Grove Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> North Vail Road, northern end to just south of West Laufer Road Blossom Road, northern end to canal crossing Barber Road, all West Walnut Grove Road, 1.25 miles west of I-5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	North Vail Road, northern end to just south of West Laufer Road Blossom Road, northern end to canal crossing Barber Road, all	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			West Walnut Grove Road, 1.25 miles west of I-5	
		Residences and Businesses	2–3 scattered residences south of and adjacent to Mokelumne River North Vail Road, northern end to just south of West Laufer Road 3 residences along Blossom Road, north of canal crossing 1 residence on Barber Road adjacent to I-5 Several residences north of West Walnut Grove Road and east of North Vail Road and west of the canal. Businesses may be located here.	
Reusable Tunnel Material Area on Rindge Tract (East Alignment)	1B, 2B, 6B	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Large portions of West Rindge Road (private road)	
		Residences and Businesses	7–10 scattered residences and farms on Rindge Tract	
Reusable Tunnel Material Area on Union Island (East Alignment)	1B, 2B, 6B	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	No public roads with anticipated views	
		Residences and Businesses	None with anticipated views	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Reusable Tunnel Material Area near the control structure south of SR 220 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 7.25–9 SR 220 PM 0–0.25	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 84 PM 7.25–9 SR 220 PM 0–0.25	
		Residences and Businesses	1 residence or farm just east of SR 84 PM 8.5	
Reusable Tunnel Material Area north of SR 12 on Brannan Island (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 12 PM 1.25–3 SR 160 PM 5.75–7.5	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 12 PM 1.25–3 SR 160 PM 5.75–7.5	
		Residences and Businesses	1 residence or farm north of SR 12 PM 1.25 3–4 residences or farms south of SR 160 PM 5.75–7.5	
Reusable Tunnel Material Area north of Delta Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Delta Road Easy Street Tule Lane Fire Place Bartels Drive Blaine Lane Ghigliazza Way	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Delta Road Easy Street Tule Lane Fire Place Bartels Drive Blaine Lane Ghigliazza Way	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	13 residences on Delta Road 12 residences or businesses on Byron Highway 9 residences or businesses on Poe Lane 7 residences or businesses on Mountain View Drive 2 residences or businesses on Baldocchi Court 5 residences or businesses on Eagle Lane	
Ventilation and Shaft Site north of Lambert Road (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Lambert Road, <u>Water-based:</u> Elk Slough and Snodgrass Slough	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Lambert Road	
		Residences and Businesses	1 north of Lambert Road 1 south of Lambert Road	
Ventilation and Shaft Site northwest of Twin Cities Road (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> Vorden Road Twin Cities Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Vorden Road Twin Cities Road	
		Residences and Businesses	1 residence/farm at Vorden Road intersection with Herzog Road	
Ventilation and Shaft Site northern portion of Tyler Island (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> Tyler Island Road east and west of site Brunk Road	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Tyler Island Road east and west of site Brunk Road	
		Residences and Businesses	1 residence/farm east of site on Tyler Island Road 1 residence/farm west of site on Tyler Island Road	
Ventilation and Shaft Site on north Staten	4	Recreationists	<u>Cyclists:</u> Staten Island Road and Gas Well Road	Mitigation Measure AES-1c: Develop and implement a spoil/

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Island (Modified Pipeline/ Tunnel Alignment)		Roadway Travelers	Staten Island Road and Gas Well Road	borrow and reusable tunnel material area reclamation plan
		Residences and Businesses	2 at the intersection of Staten Island and Gas Well Roads Several along Gas Well Road west of Staten Island Road at Eagle Tree 1 east of Staten Island Road at the southern end of the RTM area	
Ventilation and Shaft Site on south Staten Island (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Staten Island Road (note, road is private here) <u>Water-based:</u> Potentially boaters on Little Potato Slough and South Mokelumne River	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Staten Island Road SR 12 bridge crossing over Little Potato Slough	
		Residences and Businesses	None	
Ventilation and Shaft Site north of SR 12 (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 12 PM 1.5–2.5	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 12 PM 1.5–2.5	
		Residences and Businesses	1 residence north of SR 12 PM 2.25	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Ventilation and Shaft Site south of SR 12 (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Water-based:</u> Potentially boaters on Little Potato Slough and South Mokelumne River	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 12 PM 1.5–2.5	
		Residences and Businesses	None	
Ventilation and Shaft Site on Mandeville Island (Pipeline/Tunnel Alignment and Modified Pipeline/Tunnel Alignment)	1A, 2A, 3, 4, 5, 6A, 7, 8	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	No public roads with anticipated views	
		Residences and Businesses	None with anticipated views	
Ventilation and Shaft Site on the southern portion of Bacon Island (Pipeline/Tunnel Alignment and Modified Pipeline/Tunnel Alignment)	1A, 2A, 3, 4, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> South Bacon Island Road on southern end of island	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	South Bacon Island Road on southern end of island	
		Residences and Businesses	None with anticipated views	
Ventilation and Shaft Sites south of SR 4 (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 4	
		Residences and Businesses	None	
Ventilation and Shaft Sites north of SR 4 (Modified Pipeline/Tunnel Alignment)	4	Recreationists	None with anticipated views	Mitigation Measure AES-1c: Develop and implement a spoil/borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 4	
		Residences and Businesses	None	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Ventilation and Shaft Sites on Twitchell Island (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> West Twitchell Island Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	West Twitchell Island Road	
		Residences and Businesses	None with anticipated views	
Ventilation and Shaft Sites on Bethel Island (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Bethel Island Road Taylor Road	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	Bethel Island Road Taylor Road	
		Residences and Businesses	1 residence west of Bethel Island Road 2 residences on Cottage Lane Several residences along Taylor Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Canals, Pump Houses, and Transmission Lines between Intake 1 and West Walnut Grove Road, near I-5, Segment (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 160 PM 24.25–32.75 CH E9, opposite SR 160 PM 27.75–27.75 Hood Franklin Road 5 th Street, near Hood Franklin Road 8 th Street, southern end Blair Street, eastern end Lambert Road, Snodgrass Slough to 1.5 miles west of I-5 Dierssen Road, western end to 0.5 mile west of I-5 Twin Cities Road, I-5 to 1.5 mile west of I-5 Barber Road North Vail Road Blossom Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 24.25–32.75 CH E9, opposite SR 160 PM 27.75–27.75 Hood Franklin Road 5 th Street, near Hood Franklin Road 8 th Street, southern end Blair Street, eastern end Lambert Road, Snodgrass Slough to 1.5 miles west of I-5 Dierssen Road, western end to 0.5 mile west of I-5 Twin Cities Road, I-5 to 1.5 mile west of I-5 Barber Road North Vail Road Blossom Road	
		Residences and Businesses	10–15 residences, businesses, or farms SR 160 PM 24.25–32.75 5–7 residences in Hood mobile home park 1–3 residences at northern end of 3 rd Street 1–3 residences at northern end of 4 th Street 1–3 residences at northern end of 5 th Street 5–8 residences along 8 th Street, southern end 1–3 residences at eastern end of Blair Street 1 residence south of Lambert Road, adjacent to and east of Snodgrass Slough 1 farm south of Lambert Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			1 residence/farm south of Twin Cities Road, 1.5 mile west of I-5 1 residence west of I-5 and North of Barber Road 3 residences on Blossom Road	
Canals, Pump Houses, and Transmission Lines south of West Walnut Grove Road Segment (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Walnut Grove Road, I-5 to 1.5 mile west of I-5 Blossom Road near intersection with West Walnut Grove Road West Peltier Road from intersection with Blossom Road to 1 mile east of intersection West Woodbridge Road SR 12 PM 8–9.5 North Guard Road Guard Road West Eight Mile Road North Rio Blanco Road King Island Road West McDonald Road Inland Drive North Holt Road North of SR 4 PM 8.75–10.25 West Kingston School Road South Inland Drive SR 4 RM 8.2 South Tracy Boulevard Calpack Road Clifton Court Road, western end to 0.5 mile west of proposed bridge crossing over canal alignment Bonetti Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	West Walnut Grove Road, I-5 to 1.5 mile west of I-5 West Peltier Road from intersection with Blossom Road to 1 mile east of intersection West Woodbridge Road SR 12 PM 8–9.5 North Guard Road Guard Road West Eight Mile Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			North Rio Blanco Road King Island Road Rindge Tract Island Road West Rindge Tract Island Road West McDonald Road Inland Drive North Holt Road North of SR 4 PM 8.75–10.25 West Kingston School Road South Inland Drive SR 4 RM 8.2 South Tracy Boulevard Calpack Road Clifton Court Road, western end to 0.5 mile west of proposed bridge crossing over canal alignment Bonetti Road	
		Residences and Businesses	Clustering of residences along West Walnut Grove Road, I-5 to 1.5 mile west of I-5 1 residence or business south of West Woodbridge Road 1 residence north of SR 12 PM 7.7 1 residence north of SR 12 PM 8.3 1 business northwest of North Guard Road 1 residence east of North Guard Road 1 residence west of Guard Road 3–6 residences/farm on King Island Road north of West Eight Mile Road 1 residence/farm north of Bacon Island Road south of West Eight Mile Road 1 residence/farm on King Island Road south of West Eight Mile Road Paradise Point Marina 1–2 residences/farms south of Rindge Tract Island Road 1–2 residences/farms north of West Rindge Tract Island Road Business east of Inland Drive School west of North Holt Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Residences and businesses north and south of SR 4 PM 8.75 and north of PM 9.6 1 residence north of bridge on West Kingston School Road 1 business on South Inland Drive 1 residence near Middle River on South Tracy Boulevard 3 residences or farms along Calpack Road 1–5 residences or farms north and south of western end of Clifton Court Road	
Canals, Pump Houses, and Transmission Lines northern Segment (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 160 PM 24.50–29.5 CH E9, opposite SR 160 PM 24.50 29.5 SR 84 PM Solano 7.75–Yolo 7 CR 144 CR 142 CR 149 CR 150 CR 161 SR 220 PM 0.00–1.5 <u>Water-Based:</u> Miner's Slough within SR 84 PM 7.25–8.00 Sacramento River within SR 160 PM 26.50–27.25 Sutter Slough <u>Park Users:</u> Accessing Clarksburg Fishing Access	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 26.50–27.25 CH E9 within PM opposite SR 160 SR 84 PM Solano 7.75–Yolo 7 CR 144 CR 142 CR 149 CR 150 CR 161 SR 220 PM 0.00–1.5	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	2 residences or farms on Jefferson Boulevard PM 4.75–6.50 1 residence or farm on Waukeena Road 10–16 residences, businesses, or farms on CR 144 15–25 residences or farms on CH E9 3 residences or farms SR 84 PM 1.25–1.75 1 residence or farm on SR 84 PM 0.25 1 residence or farm on SR 84 PM 7.75 1 residence or farm on SR 220 PM 1.25	
Canals north and south of Byron Highway (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists, Runners, Pedestrians:</u> Herdlyn Road Byron Highway from North Bruns Way to Mountain House Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Herdlyn Road Byron Highway from North Bruns Road to Mountain House Bruns Road	
		Residences and Businesses	1 residence/business south of Byron Highway and west of Delta Mendota Canal	
Canals, Pump Houses, and Transmission Lines southern Segment (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 9.25–10.25 and PM 42.75–45.75 Sycamore Drive Elevator Road East Cypress Road Mahoney Lane Cow Poke Lane Tule Lane Fire Place Delta Road Byron Highway Poe Lane Mountain View Drive Baldocchi Court Eagle Lane Mountain View Drive and Ironhorse Road near intersection with Byron Highway Birchfield Road Crystal Lane	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Orwood Road Bixler Road Chestnut Street Balfour Road Brentwood Boulevard Point of Timber Road CR J4 Bypass Road Marsh Creek Road Ellisa Lane Fertado Lane Valley Oak Drive Taylor Lane Kellogg Creek Road Regatta Drive South Coral Street Coastal Court Seagull Court Byer Road Rancho Sereno Road <u>Water-Based:</u> Miner's Slough within SR 84 PM 9.25-10.25 Rock Slough <u>Private Clubs:</u> Approach to Veale Pheasant Club Approach to Hunting Club	
		Roadway Travelers	SR 84 PM 9.25-10.25 and PM 42.75-45.75 Sycamore Drive Elevator Road East Cypress Road Mahoney Lane Cow Poke Lane Tule Lane Fire Place Delta Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Byron Highway Poe Lane Mountain View Drive Baldocchi Court Eagle Lane Mountain View Drive and Ironhorse Road near intersection with Byron Highway Birchfield Road Crystal Lane Orwood Road Bixler Road Chestnut Street Balfour Road Brentwood Boulevard Point of Timber Road CR J4 Bypass Road Marsh Creek Road Ellisa Lane Fertado Lane Valley Oak Drive Taylor Lane Kellogg Creek Road Regatta Drive South Coral Street Coastal Court Seagull Court Byer Road Rancho Sereno Road	
		Residences and Businesses	3 residences or farms and 1 business on SR 84 PM 9.25–10.25 and PM 42.75–45.75 7–10 residences on Sycamore Drive 16 residences or businesses on East Cypress Road 3 residences or farms on Tule Lane 3 residences or farms on Fire Place	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			13 residences on Delta Road 40–55 residences or businesses on Byron Highway 9 residences or businesses on Poe Lane 7 residences or businesses on Mountain View Drive 2 residences or businesses on Baldocchi Court 8 residences on Eagle Lane 3 residences on Sunset Road 5 residences on Birchfield Road 4 residences on Crystal Lane 6 residences or businesses on Orwood Road 14 residences on Bixler Road 1 Fire Station on Bixler Road 6 residences, businesses, or institutions on Bixler Road 1 residence on Chestnut Street 10 residences or businesses on Balfour Road 2 residences on Hathorne Court 1 residence on Point of Timber Road 1 residences on Coronado Court 2 businesses on CR J4 3 residences or businesses on Bypass Road 15 residences or businesses on Marsh Creek Road 4 residences on Ellisa Lane 15 residences on Fertado Lane 5 residences on Valley Oak Drive 4 residences or businesses on Byron Highway 5–10 residences or businesses on Taylor Lane 3 residences on Kellogg Creek Road 3-5 residences on Regatta Drive 3-5 residences on South Coral Street 3-5 residences on Coastal Court 3-5 residences on Seagull Court 11 businesses on Taylor Lane 4 residences on Byer Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on residential access road south of Intake 2, west of North Stone Lake (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 160 PM 27.75–28.75	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 27.75–28.75	
		Residences and Businesses	Along SR 160 PM 27.75–28.75	
Bridge on Hood Franklin Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Hood Franklin Road 5 th Street, near Hood Franklin Road 8 th Street, southern end Blair Street, eastern end	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Hood Franklin Road 5 th Street, near Hood Franklin Road 8 th Street, southern end Blair Street, eastern end	
		Residences and Businesses	5 th Street, near Hood Franklin Road 8 th Street, southern end Blair Street, eastern end	
Bridge on Lambert Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Lambert Road, Snodgrass Slough to 1.5 miles west of I-5	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Lambert Road, Snodgrass Slough to 1.5 miles west of I-5	
		Residences and Businesses	Residence south of Lambert Road, adjacent to and east of Snodgrass Slough	
Bridge on Dierssen Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Dierssen Road, western end to 0.5 mile west of I-5	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Dierssen Road, western end to 0.5 mile west of I-5	
		Residences and Businesses	None	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on Twin Cities Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Twin Cities Road, I-5 to 1.5 mile west of I-5	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Twin Cities Road, I-5 to 1.5 mile west of I-5	
		Residences and Businesses	1 residence/farm south of Twin Cities Road, 1.5 mile west of I-5	
Bridge on West Barber Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Barber Road Northern end of North Vail Road Northern end of Blossom Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Barber Road Northern end of North Vail Road Northern end of Blossom Road	
		Residences and Businesses	1 residence west of I-5 and North of Barber Road 1 residence west of Blossom Road	
Bridge on West Walnut Grove Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Walnut Grove Road, I-5 to 1.5 mile west of I-5 Blossom Road near intersection with West Walnut Grove Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	West Walnut Grove Road, I-5 to 1.5 mile west of I-5	
		Residences and Businesses	Clustering of residences along West Walnut Grove Road, I-5 to 1.5 mile west of I-5	
Bridge on West Peltier Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Peltier Road from intersection with Blossom Road to 1 mile east of intersection	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	West Peltier Road from intersection with Blossom Road to 1 mile east of intersection	
		Residences and Businesses	None	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on West Woodbridge Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Woodbridge Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	West Woodbridge Road	
		Residences and Businesses	1 residence or business south of West Woodbridge Road	
Bridge on SR 12 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> SR 12 PM 8–9.5 North Guard Road Guard Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 12 PM 8–9.5 North Guard Road Guard Road	
		Residences and Businesses	1 residence north of SR 12 PM 7.7 1 residence north of SR 12 PM 8.3 1 residence east of North Guard Road 1 residence west of Guard Road	
Bridge on Guard Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Guard Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Guard Road	
		Residences and Businesses	1 residence west of Guard Road	
Bridge on West Eight Mile Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Eight Mile Road North Rio Blanco Road King Island Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	West Eight Mile Road North Rio Blanco Road King Island Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	1–3 residences/farm on King Island Road north of West Eight Mile Road 1 residence/farm on King Island Road south of West Eight Mile Road	
Bridge on West McDonald Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West McDonald Road Inland Drive North Holt Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible
		Roadway Travelers	West McDonald Road Inland Drive North Holt Road	Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Residences and Businesses	Business east of Inland Drive School west of North Holt Road	
Bridge on SR 4 (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> North of SR 4 PM 8.75–10.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible
		Roadway Travelers	North of SR 4 PM 8.75–10.25	Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Residences and Businesses	Residences and businesses north and south of SR 4 PM 8.75 and north of PM 9.6	
Bridge on West Kingston School Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> West Kingston School Road South Inland Drive SR 4 PM 8.2	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible
		Roadway Travelers	West Kingston School Road South Inland Drive SR 4 PM 8.2	Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Residences and Businesses	1 residence north of bridge on West Kingston School Road 1 business on South Inland Drive	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on South Tracy Boulevard (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> South Tracy Boulevard	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	South Tracy Boulevard	
		Residences and Businesses	1 residence near Middle River on South Tracy Boulevard	
Bridge on Cal Pack Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Calpack Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Calpack Road	
		Residences and Businesses	3 residences or farms along Calpack Road	
Bridge on Clifton Court Road (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Clifton Court Road, western end to 0.5 mile west of proposed bridge crossing over canal alignment Bonetti Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Clifton Court Road, western end to 0.5 mile west of proposed bridge crossing over canal alignment Bonetti Road	
		Residences and Businesses	1–5 residences or farms north and south of western end of Clifton Court Road	
Bridge on CR 142 and Roadway Realignment (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 160 PM 26.50–27.25 CH E9 within PM opposite SR 160 CR 144 CR 142 <u>Park Users:</u> Accessing Clarksburg Fishing Access <u>Water-Based:</u> Sacramento River within SR 160 PM 26.50–27.25 Sutter Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	SR 160 PM 26.50 – 27.25 CH E9 within PM opposite SR 160 CR 144 CR 142	
		Residences and Businesses	2 residences or farms on CR 144 5 residences or farms on CH E9	
Bridge on CR 158 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 1.25–2.5 CR 150 CR 149	Mitigation Measure AES-1c: Develop and implement a spoil/ borrow and reusable tunnel material area reclamation plan
		Roadway Travelers	SR 84 PM 1.25–2.5 CR 150 CR 149	
		Residences and Businesses	3 residences or farms SR 84 PM 1.25–1.75	
Bridge on CR 161 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM Solano 13.25 – Yolo 0.25 CR 161	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 84 PM Solano 13.25 – Yolo 0.25 CR 161	
		Residences and Businesses	1 residence or farm on SR 84 PM 0.25	
Bridge on SR 220 (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 7.25–8.00 SR 220 PM 0.00–1.5 <u>Water-Based:</u> Miner's Slough within SR 84 PM 7.25–8.00	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 84 PM 7.25–8.00 SR 220 PM 0.00–1.5	
		Residences and Businesses	1 residence or farm on SR 84 PM 7.75 1 residence or farm on SR 220 PM 1.25	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on SR 4 (Taylor Lane) (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 4 PM 44.00–45.50 CR J4 Byron Highway Taylor Lane Kellogg Creek Road Regatta Drive South Coral Street Coastal Court Seagull Court	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 4 PM 44.00–45.50 CR J4 Byron Highway Taylor Lane Kellogg Creek Road Regatta Drive South Coral Street Coastal Court Seagull Court	
		Residences and Businesses	4 residences or businesses on Byron Highway 5–10 residences or businesses on Taylor Lane 3 residences on Kellogg Creek Road 3–5 residences on Regatta Drive 3–5 residences on South Coral Street 3–5 residences on Coastal Court 3–5 residences on Seagull Court	
Bridge on Jefferson Boulevard (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 (Jefferson Boulevard) PM 4.75–6.50	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 84 (Jefferson Boulevard) PM 4.75–6.50	
		Residences and Businesses	2 residences or farms on Jefferson Boulevard PM 4.75–6.50 1 residence or farm on Waukeena Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on Elevator Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 9.25–10.25 Elevator Road <u>Water-Based:</u> Miner's Slough within SR 84 PM 9.25–10.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 84 PM 9.25–10.25 Elevator Road	
		Residences and Businesses	Three residences or farms on SR 84 PM 9.25–9.75 One business on SR 84 PM 9.75	
Bridge on Delta Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Delta Road Byron Highway Poe Lane Mountain View Drive Baldocchi Court Eagle Lane <u>Private Clubs:</u> Approach to Veale Pheasant Club <u>Water-Based:</u> Rock Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Delta Road Byron Highway Poe Lane Mountain View Drive Baldocchi Court Eagle Lane	
		Residences and Businesses	13 Residences on Delta Road 12 Residences or businesses on Byron Highway 9 Residences or businesses on Poe Lane 7 Residences or businesses on Mountain View Drive 2 Residences or businesses on Baldocchi Court 5 Residences or businesses on Eagle Lane	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on Orwood Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Byron Highway Birchfield Road Crystal Lane Orwood Road Bixler Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Byron Highway Birchfield Road Crystal Lane Orwood Road Bixler Road	
		Residences and Businesses	3 residences or businesses on Byron Highway 5 residences on Birchfield Road 4r residences on Crystal Lane 6 residences or businesses on Orwood Road 2 residences on Bixler Road	
Bridge on Balfour Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Chestnut Street Byron Highway Balfour Road Bixler Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Chestnut Street Byron Highway Balfour Road Bixler Road	
		Residences and Businesses	1 residence on Chestnut Street 5 residences or businesses on Byron Highway 10 residences or businesses on Balfour Road 2 residences on Hathorne Court	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on Point of Timber Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 4 PM 42.75–43.50 Byron Highway Brentwood Boulevard Point of Timber Road Bixler Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 4 PM 42.75–43.50 Byron Highway Brentwood Boulevard Point of Timber Road Bixler Road	
		Residences and Businesses	11 residences or businesses on Byron Highway 1 residence on Point of Timber Road 1 Fire Station on Bixler Road 1 residences on Coronado Court	
Bridge on Marsh Creek Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 4 PM 43.50–45.00 CR J4 Byron Highway Bypass Road Marsh Creek Road Ellisa Lane Fertado Lane Bixler Road Valley Oak Drive	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	SR 4 PM 43.50–45.00 CR J4 Byron Highway Bypass Road Marsh Creek Road Ellisa Lane Fertado Lane Fertada Lane Bixler Road Valley Oak Drive	
		Residences and Businesses	2 businesses on CR J4 10 residences or businesses on Byron Highway 3 residences or businesses on Bypass Road 15 residences or businesses on Marsh Creek Road 4 residences on Ellisa Lane 15 residences on Fertado Lane 12 residences or businesses on Bixler Road 5 residences on Valley Oak Drive	
Bridge on Bixler Road (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 4 PM 45.00–45.75 Taylor Lane Bixler Road Kellogg Creek Road Byer Road Rancho Sereno Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 4 PM 45.00–45.75 Taylor Lane Bixler Road Kellogg Creek Road Byer Road Rancho Sereno Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	11 businesses on Taylor Lane 6 residences, businesses, or institutions on Bixler Road 4 residences on Byer Road	
Bridge on Cow Poke Lane (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> East Cypress Road Mahoney Lane Cow Poke Lane Tule Lane Fire Place	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	East Cypress Road Mahoney Lane Cow Poke Lane Tule Lane Fire Place	
		Residences and Businesses	16 residences or businesses on East Cypress Road 3 residences or farms on Tule Lane 3 residences or farms on Fire Place	
Bridge on Eagle Lane (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Eagle Lane from Byron Highway to proposed canal alignment Byron Highway from Eagle Lane to Delta Road Mountain View Drive and Ironhorse Road near intersection with Byron Highway <u>Private Club:</u> Approach to Hunting Club	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Eagle Lane from Byron Highway to proposed canal alignment Byron Highway from Eagle Lane to Delta Road Mountain View Drive and Ironhorse Road near intersection with Byron Highway	
		Residences and Businesses	8 residences on Eagle Lane 10 residences on Byron Highway 3 residences on Sunset Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Bridge on Byron Highway (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> Byron Highway Holey Road North Bruns Way Brunns Road <u>Resort Users:</u> Lazy M Marina <u>Park Users:</u> Clifton Court Forebay	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Byron Highway Holey Road North Bruns Way Brunns Road	
		Residences and Businesses	2 residences or farms on North Bruns Way 1 residence or farm on Bruns Road	
On-bank fish screens near Locke and Walnut Grove (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists:</u> SR 160 PM 13.25–15.25 River Road, opposite PM SR 160 14–15.25 Isleton Road, opposite PM SR 160 13.25–14 Roads in Grand Island Estates and Walnut Grove at intersection with SR 160 and River Road <u>Water-based:</u> Along SR 160 PM 13.25–15.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 13.25–15.25 River Road, opposite PM SR 160 14–15.25 Isleton Road, opposite PM SR 160 13.25–14 Roads in Grand Island Estates and Walnut Grove at intersection with SR 160 and River Road	
		Residences and Businesses	<u>Concentration of residences and businesses along:</u> SR 160 PM 13.25–15.25 River Road, opposite PM SR 160 14–15.25 Isleton Road, opposite PM SR 160 13.25–14 Roads in Grand Island Estates and Walnut Grove at intersection with SR 160 and River Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Operable Barrier and 12 kV Transmission Lines on The Meadows Slough (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists:</u> SR 160 PM 15–15.25 River Road, opposite PM SR 160 15–15.25 <u>Water-based:</u> Along SR 160 PM 13.25–15.25	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 15–15.25 River Road, opposite PM SR 160 15–15.25	
		Residences and Businesses	<u>Concentration of residences and businesses along:</u> SR 160 PM 15–15.25 River Road, opposite PM SR 160 15–15.25	
Operable Barrier and 12 kV Transmission Lines on Snodgrass Slough (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists/Hikers:</u> Using Levee Road <u>Water-based:</u> On Snodgrass Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	None	
		Residences and Businesses	None	
Operable Barrier and 12 kV Transmission Lines on Delta Cross Channel (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists:</u> SR 160 PM 14.25–14.5 River Road, opposite PM SR 160 14.25–14.5 Levee Road <u>Water-based:</u> Along SR 160 PM 13.25–15.25 Delta Cross Channel <u>Park:</u> Off of Levee Road	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 14.25–14.5 River Road, opposite PM SR 160 14.25–14.5 Levee Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	<u>Concentration of residences and businesses along:</u> SR 160 PM 13.25–15.25 River Road, opposite PM SR 160 14–15.25 Isleton Road, opposite PM SR 160 13.25–14 Roads in Grand Island Estates and Walnut Grove at intersection with SR 160 and River Road	
Operable Barrier and 12 kV Transmission Lines on Georgiana Slough (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists:</u> River Road Isleton Road Andrus Island Road Levee Road <u>Water-based:</u> Along SR 160 PM 14–14.10 Georgiana Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	River Road Isleton Road Andrus Island Road	
		Residences and Businesses	1 boat house west of River Road, south of bridge 2 residences west of River Road, north of bridge	
Operable Barrier and 12 kV Transmission Lines on Mokolumne River (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> On Mokolumne River	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	None	
		Residences and Businesses	None	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Operable Barrier and 12 kV Transmission Lines on Fisherman's Cut (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> San Joaquin River Fisherman's Cut	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	None	
		Residences and Businesses	6–10 houses, boat homes, or cabins on Bradford Island along Fisherman's Cut	
Operable Barrier, Pumping Plant, and 12 kV Transmission Lines on the Head of Old River (Franks Tract) (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> San Joaquin River Old River	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	None	
		Residences and Businesses	None	
Operable Barrier and 12 kV Transmission Lines on Old River connection to Middle River (Connection Slough) (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> Middle River Connection Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	South Bacon Island Road	
		Residences and Businesses	1 residence northwest of barrier on Mandeville Island	
Operable Barrier and 12 kV Transmission Lines on Railroad Cut (Through Delta/Separate Corridors)	9	Recreationists	<u>Cyclists:</u> Bacon Island Road <u>Water-based:</u> Middle River Connection Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Bacon Island Road	
		Residences and Businesses	Bullfrog Landing Marina on Bacon Island Road Several residences/farm on Bacon Island north of Railroad Cut	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Operable Barrier and 12 kV Transmission Lines on Woodward Canal (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> Middle River Woodward Canal	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Woodward Island Road	
		Residences and Businesses	1 residence or farm on Bacon Island Road across from barrier	
Operable Barrier and 12 kV Transmission Lines on Threemile Slough (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> Threemile Slough Sacramento River <u>Park:</u> Brannan Island SRA along Threemile Slough	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	SR 160 PM 7-7.25. bridge over Threemile Slough	
		Residences and Businesses	1 residence and 1 residence and farm or business south of Sherman Island East Le Road	
Operable Barrier, Pumping Plant, and 12 kV Transmission Lines on Middle River (South of SR 4) (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> Middle River	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	South Klein Road	
		Residences and Businesses	1 residence or farm south of South Klein Road	
Operable Barrier and 12 kV Transmission Lines on Victoria Canal (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> Old River Victoria Canal	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	None	
		Residences and Businesses	None	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
Operable Barrier, Pumping Plant, and 12 kV Transmission Lines on San Joaquin River, near Lathrop (Through Delta/Separate Corridors)	9	Recreationists	<u>Water-based:</u> San Joaquin River Old River	Mitigation Measure AES-1e: Apply aesthetic design treatments to all structures to the extent possible Mitigation Measure AES-1g: Implement best management practices to implement project landscaping plan
		Roadway Travelers	Cohen Road	
		Residences and Businesses	None	
69 kV Transmission Lines ^a between Intake 1 and Intermediate Forebay (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> SR 160 PM 23.75–32.75 Lambert Road, from intersection with SR 160 to Elk Slough <u>Water-based:</u> SR 160 PM 23.75–29.75	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	SR 160 PM 23.75–32.75 Hood Franklin Road near intersection with SR 160 Scribner Road Lambert Road, from intersection with SR 160 to Elk Slough	
		Residences and Businesses	Along SR 160 PM 23.75–32.75 CH E9 opposite SR 160 PM 23.75–32.75	
69 kV Transmission Lines ^a between Intake 2 and Intake 5 (Alignment Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> SR 160 PM 23.75–32.75 Lambert Road, from intersection with SR 160 to Elk Slough <u>Water-based:</u> SR 160 PM 23.75–29.75	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	SR 160 PM 23.75–32.75 Hood Franklin Road near intersection with SR 160 Scribner Road Lambert Road, from intersection with SR 160 to Elk Slough	
		Residences and Businesses	Along SR 160 PM 23.75–32.75 CH E9 opposite SR 160 PM 23.75–32.75	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
230 kV Transmission Lines Intermediate Forebay to Byron Tract Forebay (North-South option) (Pipeline/Tunnel Alignment)	1A, 2A, 3, 5, 6A, 7, 8	Recreationists	<u>Cyclists:</u> Lambert Road Russell Road Vouvray Lane Herzog Road Alfalfa Plant Road Vorden Road Twin Cities Road River Road, opposite SR 160 PM 15.5–16.5 and 12.5–13.5 SR 160 PM 15.5–16.5 and 12.5–13.5 Andrus Island Road SR 12 PM 2–3 Venice Island Road South Bacon Island Road Mandeville Island Road SR 4 PM 0–1.75 Kelsoe Road Lindemann Road Herdlyn Road Byron Highway Bruns Road <u>Water-based:</u> Sacramento River along SR 160 PM 15.5–16.5 and 12.5–13.5 Georgiana Slough North Fork Mokelumne River South Fork Mokelumne River Lindsey Slough San Joaquin River Old River Middle River Railroad Cut Woodward Canal West Canal Victoria Canal Fabian and Bell Canal Grant Line Canal	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Roadway Travelers	Lambert Road Russell Road Vouvray Lane Herzog Road Alfalfa Plant Road Vorden Road Twin Cities Road River Road, opposite SR 160 PM 15.5–16.5 and 12.5–13.5 SR 160 PM 15.5–16.5 and 12.5–13.5 Andrus Island Road SR 12 PM 2–3 Venice Island Road South Bacon Island Road Mandeville Island Road SR 4 PM 0–1.75 Kelsoe Road Lindemann Road Herdlyn Road Byron Highway Bruns Road	
		Residences and Businesses	1 residence north and 2 residences south of Lambert Road Ehrhardt Estates Winery on Vouvray Lane 1 business at western end of Alfalfa Plant Road 1 residence east of Herzog Road 2 residences south of Vorden Road 1 business south of Twin Cities Road Several residences River Road, opposite SR 160 PM 15.5–16.5 and 12.5–13.5 Several residences SR 160 PM 15.5–16.5 and 12.5–13.5 Several residences Andrus Island Road and Georgiana Slough 4 residences north of SR 12 PM 2–3 2 residences/farms on Bacon Island 1 residence/farm on Woodward Island 1 farm to south of SR 4 PM 1.25 Concentration of residence in area of Kelsoe and Lindemann	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Roads 1 residence south of Byron Highway Residence along Byron Highway and California Aqueduct Businesses on Bruns Road (Banks pumping plant) and Kelso Road	
230 kV Transmission Lines East Terminus to Ventilation and Access Shaft north of Lambert Road (East-West option) (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> <u>Lambert Road</u> <u>Lambert Road intersections with:</u> <u>Various farm and private roads</u> <u>Carroll Road</u> <u>Bruceville Road</u> <u>County Road J8/Franklin Boulevard</u> <u>Point Pleasant Road</u> <u>Kestrel Lake Road</u>	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	<u>Lambert Road</u> <u>Lambert Road intersections with:</u> <u>Various agricultural roads</u> <u>Carroll Road</u> <u>Bruceville Road</u> <u>County Road J8/Franklin Boulevard</u> <u>Point Pleasant Road</u> <u>I-5</u> <u>Kestrel Lake Road</u>	
		Residences and Businesses	<u>Several residences and/or farms along Lambert Road and other unnamed roads within transmission alignment corridor</u>	
230 kV Transmission Lines ^a between Intake 5 and Intermediate Forebay (Modified Pipeline/Tunnel Alignment)	4	Recreationists	<u>Cyclists:</u> Lambert Road, from I-5 to Snodgrass Slough Dierssen Road Twin Cities Road, from I-5 to Snodgrass Slough <u>Water-based:</u> Snodgrass Slough	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	SR 160 PM 23.75–32.75 Hood Franklin Road near intersection with SR 160	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Scribner Road Lambert Road, from intersection with SR 160 to Elk Slough	
		Residences and Businesses	1 north of Lambert Road 1 south of Lambert Road North and south of Dierssen Road South of Twin Cities Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
230 kV Transmission Lines ^a between south of SR 12 and Clifton Court Forebay (Modified Pipeline/Tunnel Alignment)	4	Recreationists	SR 12 PM 2–3 Venice Island Road South Bacon Island Road Mandeville Island Road SR 4 PM 0–1.75 Byron Highway Bruns Road <u>Water-based:</u> Sacramento River along SR 160 PM 15.5–16.5 and 12.5–13.5 Georgiana Slough North Fork Mokelumne River South Fork Mokelumne River Lindsey Slough San Joaquin River Old River Middle River Railroad Cut Woodward Canal North Victoria Canal	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	SR 12 PM 2–3 Venice Island Road South Bacon Island Road Mandeville Island Road SR 4 PM 0–1.75 Byron Highway Bruns Road	
		Residences and Businesses	1 residence north and 2 residences south of Lambert Road Ehrhardt Estates Winery on Vouvray Lane 1 business at western end of Alfalfa Plant Road 1 residence east of Herzog Road 2 residences south of Vorden Road 1 business south of Twin Cities Road Several residences River Road, opposite SR 160 PM 15.5–16.5 and 12.5–13.5 Several residences SR 160 PM 15.5–16.5 and 12.5–13.5	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
			Several residences Andrus Island Road and Georgiana Slough 4 residences north of SR 12 PM 2-3 2 residences/farms on Bacon Island 1 residence/farm on Woodward Island 1 farm to south of SR 4 PM 1.25 1 residence south of Byron Highway <u>Lazy M Marina</u> Near Byron Inn Café Along Byron Hot Springs Road, near intersection with Byron Highway Residence along Byron Highway and California Aqueduct Businesses on Bruns Road (Banks pumping plant) and Kelso Road	
230 kV Transmission Lines Canal Terminus on Union Island to Byron Tract Forebay (East Alignment)	1B, 2B, 6B	Recreationists	<u>Cyclists:</u> Kelsoe Road Lindemann Road Herdlyn Road Byron Highway Bruns Road <u>Water-based:</u> Middle River Railroad Cut Woodward Canal West Canal Victoria Canal Fabian and Bell Canal Grant Line Canal	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	Kelsoe Road Lindemann Road Herdlyn Road Byron Highway Bruns Road	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	Concentration of residence in area of Kelsoe and Lindemann Roads 1 residence south of Byron Highway Residence along Byron Highway and California Aqueduct Businesses on Bruns Road (Banks Pumping Plant) and Kelso Road	
230 kV Transmission Lines Canal Terminus on Ryer Island to Lambie Substation (West Alignment)	1C, 2C, 6C	Recreationists	<u>Cyclists:</u> SR 84 PM 8.5–9.75 River Road, opposite SR 84 PM 8.5–9.75 Liberty Island Road B and R Lane Flannery Road Canright Road Robinson Road Goose Haven Road Lambie Road Bithell Lane <u>Water-based:</u> Sacramento River along SR 84 PM 8.5–9.75	Mitigation Measure AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate transmission lines and underground transmission lines where feasible
		Roadway Travelers	SR 84 PM 8.5–9.75 River Road, opposite SR 84 PM 8.5–9.75 Liberty Island Road B and R Lane Flannery Road Canright Road Robinson Road Goose Haven Road Lambie Road Bithell Lane	

Table 17E-1. Continued

Permanent Feature	Alternatives ^c	Affected Viewers Groups	Locations Feature is Visible From	Mitigation Measures
		Residences and Businesses	1 residence or farm just east of SR 84 PM 8.5 1 residence or farm just east of SR 84 PM 9.75 2–3 residences or farms on Liberty Island Road south of transmission lines Several residences along B and R Lane 1 residence or farm east of Canright Road 4 residences north of Flannery Road 3 residences south of Flannery Road 1 business west of Goose Haven Road 1 residence or farm east of Goose Haven Road 3 businesses north and south of Lambie Road 1 business west of Bithell Lane	

Appendix 18B

Identified Resources Potentially Affected by the BDCP Alternatives

18B.1 Identified Resources Affected by the Alternatives

The following tables identify built historic resources within each APE or study area for each alternative. Built resources may be directly affected by the project (D), indirectly affected such as alterations of the historic viewshed (I), or determined to not be affected by the alternative (N).

Table 18B-9. Identified and Evaluated (Accessible) Built Environment Resources Potentially Affected, Alternative 4

Property #	APN	Address #	Property Name	Date Built	I/D/N	Project Feature
PTO_005_002	341190230043	9521 River Road Clarksburg	Mosher House	c1903	D	Intake 2, permanent surface impact, permanent access road; temporary surface impact, temporary access road, temporary transmission lines.
PTO_007_004	043-260-005	37232 South River Road Clarksburg	Delta-style House	1925	I	Intake 2, seen from across the river.
PTO_007_020	043-170-012	53555 Country Road 141 Clarksburg	George Cornish House	1880/1915	I	Intake 2, seen from across the river.
PTO_007_012	043-260-019	37500 South River Road Clarksburg	Delta-style House	1919	I	Intake 1, seen from across the river.
PTO_009_001	043-090-001	28320 South River Road Clarksburg	American Foursquare	C1900	I	Intake 3, seen from across the river
PTO_010_002	341320010021	10255 River Road, Clarksburg	Rosebud Rancho	1877/1990	D	Intake 3, permanent surface impact, permanent access road, permanent transmission line; temporary surface impact, temporary access road.

Property #	APN	Address #	Property Name	Date Built	I/D/N	Project Feature
PTO_013_006	341320092001	10725 2nd Street Hood	Delta-style House	1915	N	No Impact
PTO_013_015	341320093007	10776 2nd Street Hood	Delta-style House	1910	N	No Impact
PTO_013_064	341320120012	10911 River Road Courtland	Queen Anne w/ Classical Revival elements	c1900	N	No Impact. However tunnel is below historically associated field behind the residence.
PTO_016_001	341320210044	11275 River Road Courtland	George B. Greene House	1876	D/I	Intake 5 temporary surface impact; permanent visual impact. No direct impact if property can be replaced to original condition.
PTO_029_001		State Highway 4 Stockton	Old River Bridge	1915	N	No impact.
PTO_159_002		South Bacon Island Road	Bacon Island South Bridge	1905	N	No impact. Part of permanent access road
SCO_059_001		South Bacon Island Road	Woodward Island Railroad Bridge	1928	N	No Impact
WEST_047_001	043-070-021	40478 & 40580 South River Road, Clarksburg	Delta-style House	C1900	N	No Impact
Bacon Island				1900-1930	D	Direct impact to areas inaccessible to survey. Will need access to determine if contributors will be affected. Assume direct impact.
Central Valley Project			Delta Mendota Canal	1946-1952	D	Permanent surface impact and transmission lines.
California State Water Project, Delta Field Division, Affected Properties: MPTO_002_001			Portion of California Water Project		D	Expansion of the existing reservoir
Contra Costa County	001-031-007					No Impact
	001-031-009					No Impact
	001-031-011					No Impact
	001-031-012					No Impact
	001-031-021					No Impact

Property #	APN	Address #	Property Name	Date Built	I/D/N	Project Feature
	001-041-012					No Impact
	001-041-024					No Impact
	001-041-035					No Impact
	001-041-039					No Impact
	001-041-040					No Impact
	001-081-028					No Impact
	001-091-005					No Impact
	001-101-007					No Impact
	002-250-005					No Impact
Alameda County:	99B-7010-5					No Impact

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2 18B.2 Built Environment Resources, Recommended Mitigation

3 Table 18B-24. Alternative 4, Recommended Mitigation

Property #	Property Name	I/D/N	Project Feature	Recommended avoidance/minimization/mitigation
PTO_005_002	Mosher House	D	Intake 2, permanent surface impact, permanent access road; temporary surface impact, temporary access road, temporary transmission lines.	HABS and HALS. Prepare HSR, stabilize, and move house to new, similar in context, property.
PTO_007_004	Delta-style House	I	Intake 2, seen from across the river.	HALS with vista images from property to across the river.
PTO_007_012	Delta-style House	I	Intake 2, seen from across the river.	HALS with vista images from property to across the river.
PTO_007_020	George Cornish House	I	Intake 2, seen from across the river.	HALS with vista images from property to across the river.
PTO_009_001	Foursquare vernacular	I	Intake 3, seen from across the river.	HALS with vista images from property to across the river.
PTO_010_002	Rosebud Rancho	D	Intake 3, permanent surface impact, permanent access road, permanent transmission line; temporary surface impact, temporary access road.	This property, listed on the NRHP, has lost integrity. Recommend initiating procedures for delisting. Mitigation unnecessary.

Property #	Property Name	I/D/N	Project Feature	Recommended avoidance/minimization/mitigation
PTO_016_001	George B. Greene House	D/I	Intake 5 temporary surface impact; permanent visual impact. No direct impact if property can be replaced to original condition.	Avoid temporary surface impact that may impact any historic buildings and structures. HALS and HSR prior to any construction activity. Prepare protection plan, which may include stabilization of any/all historic buildings on the property. Prepare study of potential construction-related vibration and determine safe threshold. Should it be determined that vibration may impact the historic buildings, stabilize. Monitor historic building for vibration throughout construction if the results of the pre-construction study warrant it. If impact to any ancillary historic buildings cannot be avoided during temporary surface impact, stabilize and temporarily move buildings elsewhere on the property; mothball for duration. Restore landscape impacted to pre-construction condition. Permanent visual impact. HALS to include vista images toward what will be Intake 5.
Bacon Island		D	Direct impact to areas inaccessible to survey. Will need access to determine if contributors will be affected. Assume direct impact.	Access to all island to update prior evaluation. Conduct HALS for areas that will be directly impacted by construction.
Central Valley Project	Delta Mendota Canal	D	Permanent surface impact and transmission lines.	HAER recordation section of canal to Tracy Pumping Station.
MPTO_002_001	Components of the Delta Field Division, SWP	D	Permanent expansion of Clifton Court Forebay	HAER recordation of Clifton Court Forebay. Prepare an in depth historic context of the California Water Project system.

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**Bay Delta Conservation Plan
Construction Traffic Impact Analysis**

6

7

8

9

Administrative Draft Report

10

May 15, 2015

11

12

Submitted to ICF International by Fehr & Peers

1	Table of Contents	
2	1. Introduction.....	1
3	2. Analysis Approach	8
4	<i>Roadway Traffic Operations</i>	<i>8</i>
5	<i>Roadway Physical Conditions</i>	<i>9</i>
6	3. Setting	12
7	<i>Baseline Roadway Traffic Operations.....</i>	<i>12</i>
8	<i>Baseline Roadway Physical Conditions</i>	<i>20</i>
9	4. Agency Outreach.....	30
10	5. Analysis Criteria	32
11	6. Impact Analysis	35
12	<i>Alternative Alignments Description</i>	<i>35</i>
13	<i>Trip Generation – Peak Construction Month</i>	<i>35</i>
14	<i>Background Traffic Growth.....</i>	<i>36</i>
15	<i>Trip Distribution and Assignment</i>	<i>36</i>
16	<i>Project Roadway Traffic Operations Analysis and Physical Conditions Assessment.....</i>	<i>37</i>
17	<i>Impact Statements.....</i>	<i>119</i>
18	7. Mitigation Measures.....	122
19		

List of Tables

1		
2	Table 1: Study Segments by Jurisdiction.....	2
3	Table 2: Functional Class and Hourly LOS Thresholds.....	8
4	Table 3: Pavement Condition Index (PCI) Rating Scale	10
5	Table 4: Baseline Roadway Traffic Operations	13
6	Table 5: Baseline Roadway Pavement Conditions.....	21
7	Table 6: Agencies Contacted Regarding Potential Construction-Related Project Impacts	31
8	Table 7: Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8) Project Roadway Traffic Operations	38
9	Table 8: Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8) Project Roadway Pavement Impacts	48
10	Table 9: Modified Pipeline/Tunnel (Alternative 4) Project Roadway Traffic Operations.....	55
11	Table 10: Modified Pipeline/Tunnel (Alternative 4) Project Roadway Pavement Impacts	66
12	Table 11: East Canal (Alternatives 1B, 2B, and 6B) Project Roadway Traffic Operations.....	73
13	Table 12: East Canal (Alternatives 1B, 2B, and 6B) Project Roadway Pavement Impacts.....	82
14	Table 13: West Canal (Alternatives 1C, 2C, and 6C) Project Roadway Traffic Operations.....	89
15	Table 14: West Canal (Alternatives 1C, 2C, and 6C) Project Roadway Pavement Impacts.....	97
16	Table 15: Separate Corridors (Alternative 9) Project Roadway Traffic Operations.....	104
17	Table 16: Separate Corridors (Alternative 9) Project Roadway Pavement Impacts.....	113
18	Table 17: Construction Impact Summary.....	119
19	Table 18: Roadway Traffic Operations Mitigation Summary	129

20

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1. Introduction

This technical report documents the construction traffic impact analysis for the Bay Delta Conservation Plan (BDCP) EIR/EIS. The information contained in this report identifies the potential traffic impacts associated with construction related activities, employees, and equipment, and recommends mitigation measures to avoid or reduce potential impacts. Identifying all the construction related activity for the BDCP with a high degree of certainty is challenging at this stage of project development for such a large and complex project. The Department of Water Resources (DWR) will ultimately make numerous final design and engineering decisions that may influence construction traffic conditions. Hence, one of the key objectives of this evaluation is to provide sufficient information about the study area's traffic operations and physical roadway conditions such that construction impacts can be avoided or minimized. For instance, the analysis assumes a reasonable "worst-case-scenario" of construction traffic that likely overstates construction traffic impacts regardless of changes that may be made to the underlying traffic assumptions for the project as a result of final engineering and design plans. Further, the mitigation measures recommended in this analysis are sufficiently broad to provide the BDCP proponents flexibility in the types of strategies that can be implemented to address construction traffic impacts while still ensuring that the impacts would be avoided or reduced to the maximum extent feasible.

The construction traffic impact analysis has been coordinated with the air quality analysis to obtain construction trips (employees and trucks) by construction activity location for the following five conveyance alternatives:

- Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8)
- Modified Pipeline/Tunnel (Alternative 4)
- East Canal (Alternatives 1B, 2B, and 6B)
- West Canal (Alternatives 1C, 2C, and 6C)
- Separate Corridors (Alternative 9)

The construction activity information includes a proposed construction schedule, which details the year and month of each construction activity. This study uses the schedule and construction trip information as the basis for identifying potential construction impacts. In consultation with the project team and agency staff, 114 roadway segments were selected for analysis based on the likelihood that they would be utilized for construction-related activities. Table 1 provides a list of the study segments by jurisdiction with location and functional classification used for traffic operations analysis. Note that under baseline (Year 2009) conditions, State Route 4 traveled through downtown Brentwood and Oakley. In January 2012, this section of SR 4 was relinquished to the Cities of Brentwood and Oakley, and Contra Costa County, and Caltrans adopted the State Route 4 Bypass as the new State Route 4. Since construction activity will occur after the relinquishment and new route adoption, the study roadway segments are categorized under the post-relinquishment jurisdiction.

Figures 19-2a-19-2c show where each roadway facility is in relation to the BDCP study area.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

1

TABLE 1: STUDY SEGMENTS BY JURISDICTION

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line	Alameda Co.	Alameda Co.	Major 2-lane Highway
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Caltrans D4/ City of Brentwood ¹	Brentwood	2-lane Arterial
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Caltrans D4/ City of Brentwood ¹	Brentwood	4-lane Arterial Divided
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	City of Brentwood	Brentwood	4-lane Arterial Divided
CC 01	Bethel Island Rd	Oakley City Limits	End	Contra Costa Co.	Contra Costa Co.	Major 2-lane Highway
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Contra Costa Co.	Contra Costa Co.	Major 2-lane Highway
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Caltrans D4/ Contra Costa Co. ¹	Contra Costa Co.	Major 2-lane Highway
CC 04	Byron Hwy	Delta Rd	Old SR 4	Contra Costa Co.	Contra Costa Co.	Major 2-lane Highway
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	Contra Costa Co.	Byron	Major 2-lane Highway
CT 01	I-5 NB	Florin Rd	Pocket Rd	Caltrans D3	Sacramento	3-lane Freeway
CT 02	I-5 SB	Florin Rd	Pocket Rd	Caltrans D3	Sacramento	3-lane Freeway
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Caltrans D3	Sacramento	3-lane Freeway
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Caltrans D3	Sacramento	3-lane Freeway
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Caltrans D3	Elk Grove	2-lane Freeway
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Caltrans D3	Elk Grove	2-lane Freeway
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Caltrans D3	Sacramento Co.	2-lane Freeway
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Caltrans D3	Sacramento Co.	2-lane Freeway
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Caltrans D3	Sacramento Co.	2-lane Freeway
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Caltrans D3	Sacramento Co.	2-lane Freeway
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Caltrans D10	Sacramento Co.	2-lane Freeway

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Caltrans D10	Sacramento Co.	2-lane Freeway
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Caltrans D10	Sacramento Co./ San Joaquin Co.	2-lane Freeway
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Caltrans D10	Sacramento Co./ San Joaquin Co.	2-lane Freeway
CT 15	I-5 NB	Peltier Rd	Turner Rd	Caltrans D10	San Joaquin Co.	2-lane Freeway
CT 16	I-5 SB	Peltier Rd	Turner Rd	Caltrans D10	San Joaquin Co.	2-lane Freeway
CT 17	I-5 NB	Turner Rd	SR 12	Caltrans D10	San Joaquin Co.	2-lane Freeway
CT 18	I-5 SB	Turner Rd	SR 12	Caltrans D10	San Joaquin Co.	2-lane Freeway
CT 19	I-5 NB	SR 12	Eight Mile Rd	Caltrans D10	San Joaquin Co.	3-lane Freeway
CT 20	I-5 SB	SR 12	Eight Mile Rd	Caltrans D10	San Joaquin Co.	3-lane Freeway
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Caltrans D10	Stockton	3-lane Freeway
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Caltrans D10	Stockton	3-lane Freeway
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Caltrans D3	Sacramento Co./ Yolo Co.	Minor 2-lane Highway
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Caltrans D3	Isleton	Minor 2-lane Highway
CT 31	SR 160	A St (Isleton)	SR 12	Caltrans D3	Sacramento Co.	Minor 2-lane Highway
CT 32	SR 160	SR 12	Brannan Island Rd	Caltrans D3	Sacramento Co.	Major 2-lane Highway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Caltrans D3	Yolo Co.	Minor 2-lane Highway

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Caltrans D4	Yolo Co./Solano Co.	Minor 2-lane Highway
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Caltrans D4	Fairfield	5-lane Freeway + HOV
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Caltrans D4	Fairfield	5-lane Freeway + HOV
CT 37	SR 12 EB	I-80	Beck Ave	Caltrans D4	Fairfield	2-lane Freeway
CT 38	SR 12 WB	Beck Ave	I-80	Caltrans D4	Fairfield	2-lane Freeway
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	Caltrans D4	Suisun City	4-lane Multilane Highway
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy	Caltrans D4	Suisun City	4-lane Multilane Highway
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	Caltrans D4	Solano Co.	Major 2-lane Highway
CT 42	SR 12	SR 113	SR 84 (River Rd)	Caltrans D4	Rio Vista/Solano Co.	Major 2-lane Highway
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Caltrans D4	Sacramento Co./Rio Vista	2-lane Arterial
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Caltrans D3	Sacramento Co.	Major 2-lane Highway
CT 45	SR 12	Sacramento Co./SJ Co. Line	I-5	Caltrans D10	San Joaquin Co.	Major 2-lane Highway
CT 46	I-80 EB	SR 113	Pedrick Rd	Caltrans D4	Dixon	3-lane Freeway
CT 47	I-80 WB	Pedrick Rd	SR 113	Caltrans D4	Dixon	3-lane Freeway
CT 48	SR 113	I-80	Dixon City Limits	Caltrans D4	Dixon	4-lane Arterial, Divided
CT 49	SR 113	Dixon City Limits	SR 12	Caltrans D4	Solano Co.	Minor 2-lane Highway
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Contra Costa Co./ Caltrans D4 ²	Contra Costa Co.	Major 2-lane Highway
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Caltrans D4	Contra Costa Co.	Major 2-lane Highway
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Caltrans D4	Contra Costa Co./San Joaquin Co.	Major 2-lane Highway
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Caltrans D10	San Joaquin Co./Stockton	Minor 2-lane Highway

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Caltrans D10	Stockton	4-lane Freeway
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Caltrans D10	Stockton	4-lane Freeway
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Caltrans D10	Stockton	3-lane Freeway
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Caltrans D10	Stockton	3-lane Freeway
CT 58	I-205 EB	I-580	Mountain House Pkwy	Caltrans D10	Mountain House	3-lane Freeway
CT 59	I-205 WB	I-580	Mountain House Pkwy	Caltrans D10	Mountain House	3-lane Freeway
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Caltrans D10	Mountain House/Tracy	3-lane Freeway
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Caltrans D10	Mountain House/Tracy	3-lane Freeway
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Caltrans D10	Tracy	3-lane Freeway
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Caltrans D10	Tracy	3-lane Freeway
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Caltrans D10	Tracy	3-lane Freeway
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Caltrans D10	Tracy	3-lane Freeway
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	City of Isleton	Isleton	Major 2-lane Highway
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Caltrans D4/ City of Oakley ¹	Oakley	4-lane Arterial Divided
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Caltrans D4/ City of Oakley ¹	Oakley	2-lane Arterial
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	City of Oakley	Oakley	Major 2-lane Highway
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	City of Oakley	Oakley	Minor 2-lane Highway
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	City of Oakley	Oakley	Minor 2-lane Highway
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	City of Sacramento	Sacramento	4-lane Arterial Divided
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	City of Sacramento	Sacramento	2-lane Arterial
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Sacramento Co./ Yolo Co.	Sacramento Co./ Yolo Co.	Minor 2-lane Highway
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Sacramento Co.	Sacramento Co.	Major 2-lane Highway

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 06	Twin Cities Rd	River Rd	I-5	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 08	Sutter Slough Bridge Rd	Sacramento Co./Yolo Co. Line	Paintersville Bridge	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Sacramento Co.	Sacramento Co.	Major 2-lane Highway
SC 11	Walnut Grove Rd/ River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	Sacramento Co.	Walnut Grove	Minor 2-lane Highway
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Sacramento Co.	Sacramento Co.	Minor 2-lane Highway
SJ 01	Walnut Grove Rd	Sacramento Co./SJ Co. Line	I-5	San Joaquin Co.	San Joaquin Co.	Major 2-lane Highway
SJ 02	Peltier Rd	Blossom Rd	I-5	San Joaquin Co.	San Joaquin Co.	Minor 2-lane Highway
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	San Joaquin Co.	San Joaquin Co.	Major 2-lane Highway
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	San Joaquin Co.	San Joaquin Co.	Major 2-lane Highway
SJ 05	Byron Hwy	Alameda Co./ San Joaquin Co. Line	Mountain House Pkwy	San Joaquin Co.	Mountain House	Major 2-lane Highway
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	San Joaquin Co.	Mountain House	Minor 2-lane Highway
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	San Joaquin Co.	Mountain House	4-lane Arterial, Divided
STK 01	Eight Mile Rd	Stockton City Limits	I-5	City of Stockton	Stockton	2-lane Arterial

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Jurisdiction	Location	Analysis Functional Classification
TRA 01	Tracy Blvd	Tracy City Limits	I-205	City of Tracy	Tracy	2-lane Arterial
WS 01	Harbor Blvd	Industrial Blvd	US 50	City of West Sacramento	West Sacramento	4-lane Arterial Divided
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	City of West Sacramento	West Sacramento	4-lane Arterial Divided
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	City of West Sacramento	West Sacramento	4-lane Arterial Divided
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	City of West Sacramento	West Sacramento	Minor 2-lane Highway
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Yolo Co.	Yolo Co.	Minor 2-lane Highway
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Yolo Co.	Yolo Co.	Minor 2-lane Highway
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Yolo Co.	Yolo Co.	Minor 2-lane Highway

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions – roadway is relinquished to local jurisdiction in 2012 after Baseline Year (2009).
 - (2) Facility is analyzed as a local facility under Baseline Conditions – roadway is adopted as a State facility after Baseline Year (2009).
- Segment ID naming convention refers to jurisdiction and segment number.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

2. Analysis Approach

The construction traffic impact analysis consisted of assessing both traffic operations and physical roadway conditions to help inform the public, decision makers, and future contractors about the potential amount and location of construction traffic and how to avoid or minimize impacts.

Roadway Traffic Operations

This report documents the analysis of each study roadway facility, which was based on level of service (LOS) performance measures. LOS is a qualitative measure of traffic operating conditions where a letter grade is used to represent the level of comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

Traffic operations of roadway segments were analyzed using procedures and methodologies contained in the *Highway Capacity Manual (HCM)*, Transportation Research Board, 2010. None of the jurisdictions have hourly LOS traffic volume thresholds for roadway segments; therefore, Fehr & Peers developed hourly traffic volume thresholds based on the 2010 HCM methodology. Table 2 displays the hourly capacity threshold associated with each LOS category.

TABLE 2: FUNCTIONAL CLASS AND HOURLY LOS THRESHOLDS

Facility Type	A	B	C	D	E
Minor 2-lane Highway	90	200	680	1,410	1,740
Major 2-lane Highway	120	290	790	1,600	2,050
4-lane, Multilane Highway	2,140	3,520	5,060	6,560	7,300
2-Lane Arterial	-	-	970	1,760	1,870
4-Lane Arterial, Divided	-	-	1,920	3,540	3,740
2-Lane Freeway ¹	1,110	2,010	2,880	3,570	4,010
3-Lane Freeway ¹	1,700	3,080	4,400	5,410	6,060
4-Lane Freeway ¹	2,320	4,200	5,950	7,280	8,140
5-Lane Freeway +HOV Lane ¹	3,300	5,970	8,350	10,160	11,320

Source: Fehr & Peers, based on Highway Capacity Manual 2010.

Notes: (1) LOS capacity threshold is for one direction.

"-" = LOS is not achievable due to the type of facility.

Roadway segment traffic data was collected for all study segments to conduct traffic operations analysis to estimate the weekday hourly LOS for baseline (year 2009) conditions from 6 AM to 7 PM within the study area. Traffic volume estimates for baseline conditions were obtained from traffic counts collected between 2008 and 2012. Data sources included Caltrans, previous transportation studies, and new counts conducted for this project. Approximately half of the study roadway segments required new counts, which were collected between February and April 2012.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

It should be noted that the 2008 counts were factored up based on historical yearly growth rates from the previous ten (10) years from 1998 to 2008 to determine 2009 traffic volume estimates. The 2012 traffic counts were used directly in the baseline conditions analysis and not adjusted down to determine 2009 traffic volumes. Baseline condition LOS results were compared to the public agency LOS thresholds identified in traffic impact study guidelines, general plans, or equivalent plans. For Caltrans facilities, the LOS threshold used for the analysis was consistent with the “concept facility LOS” described in relevant Transportation Concept Reports (TCRs) and Corridor System Management Plans (CSMPs)¹. The *Guide for the Preparation of Traffic Impact Studies* (Caltrans, December 2002) states that when a State facility currently operates at an unacceptable LOS (e.g., LOS F), the existing measure of effectiveness should be maintained.

The following were additional key assumptions relevant to the traffic operations analysis.

- All construction employees are expected to generate two trips per day – one arriving to the construction site and one departing the construction site.
- To model a reasonable “worst-case” scenario, all construction truck and employee trips are assigned to the roadway network for each analysis hour
- Material delivery to transport materials and equipment to the construction site
- Barge traffic will not require additional raises of the SR 12 bridge

Roadway Physical Conditions

Roadways may experience physical impacts from the project (i.e., truck traffic causing pavement deterioration) that require mitigation. Typically, physical roadway impacts are not evaluated for construction traffic because of the temporary nature of construction activities. This project has a much longer construction period than a typical construction project and truck trips in particular could contribute to pavement deterioration on study area roadways that were either not designed to accommodate truck traffic or have poor existing pavement condition.

Chapter 610 of the Caltrans Highway Design Manual (2009) provides guidance on pavement engineering considerations including roadway rehabilitation techniques to extend the life of pavement. As stated in Chapter 613.1, “pavements are engineered to carry the truck traffic loads expected during the pavement design life. Truck traffic...is the primary factor affecting pavement design life and its serviceability.” Further, information obtained from local jurisdictions suggests that some roadways identified as potential construction site access routes do not have adequate engineered pavement sections to withstand construction traffic, particularly heavy vehicles.

¹The bibliography contains each TCR and CSMP that was used in this study.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Existing pavement conditions were obtained from most jurisdictions. Many jurisdictions have a pavement management system, which typically includes routine visual inspection of roadway facilities. For most local jurisdictions included in this analysis, the calculated Pavement Condition Index (PCI) is used as the metric to describe the condition of a roadway section. Some agencies use PCI information as the basis for their preventative roadway maintenance or roadway reconstruction programs. Similar to the PCI, the City of Sacramento and San Joaquin County use a Pavement Quality Index (PQI) and an Overall Condition Index (OCI), respectively, to rank and prioritize roadway facilities. These two systems are described following the PCI description below.

PCI values were obtained for study segments to the extent that they were available. Most jurisdictions provided the latest recorded PCI. Where PCI was unknown, general information regarding the perceived condition of the facility was obtained from the jurisdiction's representative. A spreadsheet was developed to record all known pavement condition information supplied by the jurisdictions. Pavement conditions vary greatly by jurisdiction and by roadway. Facilities range from engineered pavement sections constructed in accordance with a design traffic index (TI) associated with a design life of 20 or more years to local agricultural routes and levee roads with non-engineered sections. To the extent this information was supplied by the jurisdictions, it was recorded in the spreadsheet.

The Metropolitan Transportation Commission (MTC) has published two manuals, Pavement Condition Index Distress Identification Manual for Asphalt and Surface Treatment Pavements (February 1986) and Pavement Condition Index Distress Identification Manual for Jointed Portland Cement Concrete Pavements (October 1991). Both provide guidance to assist pavement inspectors in determining surface distress and severity levels. The inspection method is designed to facilitate the calculation of the PCI, which is a composite rating index. The PCI is expressed as a number from 0 to 100, with 100 being new pavement. MTC uses the PCI scale presented in Table 3 to rate pavement condition.

TABLE 3: PAVEMENT CONDITION INDEX (PCI) RATING SCALE

PCI	Rating
100 – 86	Excellent
85 – 71	Very Good
70 – 56	Good
55 – 41	Fair
40 – 26	Poor
25 – 11	Very Poor
10 – 0	Failed

Source: Metropolitan Transportation Commission, 1986, 1991

A PCI of 55 represents the threshold between "Fair/Good" condition. A PCI greater than 70 is considered "Very Good". For the purpose of this analysis, local roadway segments were identified as "acceptable" if the PCI is greater than 55. PCI values equal to or less than 55 were recorded as "deficient".

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

The City of Sacramento utilizes a different pavement management application, which results in the calculation of the segment's overall condition represented by the Pavement Quality Index (PQI). The PQI is a composite score of three indicators for ride comfort, surface distress and structural adequacy. A PQI greater than 50 is considered "Fair". A PQI greater than 70 is considered "Good". For the purpose of this analysis, pavement conditions are "acceptable" if the PQI is greater than 70.

San Joaquin County updates pavement conditions every two years. Their pavement management system calculates the Overall Condition Index (OCI) based on eight factors including surface distress, patching, ride, and drainage condition. An OCI greater than 60 is considered "Fair". An OCI greater than 70 is considered "Good". For the purpose of this analysis, pavement conditions are "acceptable" if the OCI is greater than 70.

Caltrans applies a different methodology for assessing pavement condition. The Caltrans 2011 State of Pavement Report (December 2011) states that an annual Pavement Condition Survey (PCS) is conducted to continually monitor the State Highway System. The PCS consists of a visual inspection of the pavement surface by a team of pavement analysts and the use of an automated data collection system. The result is an International Roughness Index (IRI) for roadway segments, which is a measure of ride quality. IRI units are measured by inches per mile and the data measures relative vertical movement of the vehicle. On rough pavements, IRI values are high. Caltrans has adopted the Federal Highway Administration (FHWA) threshold of an IRI value of less than or equal to 170 inches per mile as "acceptable". According to the FHWA, the IRI value must be less than 95 to be rated "good".

IRI values, reflective of 2009 pavement conditions, were obtained from Caltrans' Division of Maintenance. Pavement conditions vary greatly by Caltrans District and by facility. IRI values were recorded in the physical conditions spreadsheet. Caltrans roadway segments were identified as "acceptable" if the IRI was less than or equal to 170. Facilities with IRI values greater than 170 were recorded as "deficient". It's important to note that the PCI and IRI scales are opposite of each other, meaning that a high PCI is good but a high IRI equates to a poor condition.

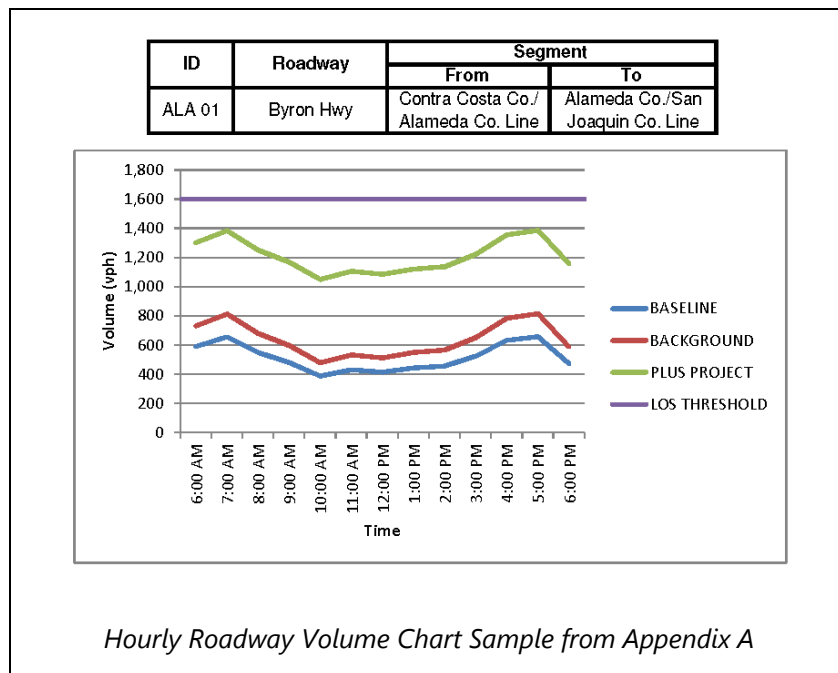
BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

3. Setting

Baseline Roadway Traffic Operations

Table 4 summarizes the baseline LOS for the study roadway segments. Fifteen roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM analysis period. Refer to Table 2 for a definition of LOS as it relates to hourly traffic volumes by facility type. Section 5 describes the LOS thresholds established by each jurisdiction. Where baseline traffic volumes exceed LOS thresholds, Table 4 identifies the number of occurrences and the respective time frame when the condition occurs. As noted in Section 1, the baseline conditions analysis uses LOS thresholds from the appropriate jurisdiction prior to the relinquishment and new route adoption associated with the SR 4 Bypass in Brentwood.

Appendices A through D contain LOS analysis charts that show hourly traffic volumes for each roadway segment along with the LOS volume threshold. An annotated chart sample from Appendix A is provided below.



For the project analysis scenarios, the charts show how hourly volumes will change with the addition of background traffic growth that will occur up to the construction period. This data display allows reviewers to quickly assess whether LOS thresholds are exceeded.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1

TABLE 4: BASELINE ROADWAY TRAFFIC OPERATIONS

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./ San Joaquin Co. Line	D	1,600	385 to 656	-
BRE 01	SR 4 (Brentwood Blvd) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)
BRE 02	SR 4 (Brentwood Blvd) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-
BRE 03	Balfour Rd	SR 4 (Brentwood Blvd)	Brentwood City Limits	D	3,540	437 to 1,300	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-
CC 03	SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	SR 4	D	1,410	108 to 240	-
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9-1PM; 2-6PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM–7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM–7PM)
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ San Joaquin Co. Line	C	790	704 to 1,030	12 (6AM–6PM)
CT 45	SR 12	Sacramento Co./ San Joaquin Co. Line	I-5	C	790	773 to 1,164	12 (6AM–6PM)
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5 PM)
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-
CT 50	Marsh Creek Rd (Future SR 4) ²	Vasco Rd	SR 4 (Byron Hwy)	D	1,600	442 to 733	-
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
OAK 01	SR 4 (Main St) ¹	SR 160	Cypress Rd	C	1,920	752 to 1,663	-
OAK 02	SR 4 (Main St) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)
OAK 03	Cypress Rd	SR 4 (Main Street)	Bethel Island Rd	D	1,600	304 to 764	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-
OAK 05	Delta Rd	SR 4 (Main Street)	Byron Hwy	D	1,410	155 to 334	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137	-
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ San Joaquin Co. Line	D	1,410	175 to 332	-
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-
SJ 01	Walnut Grove Rd	Sacramento Co./ San Joaquin Co. Line	I-5	C	790	141 to 232	-
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-
SJ 05	Byron Hwy ³	Alameda Co./ San Joaquin Co. Line	Mountain House Pkwy	D	1,600	521 to 824	-
SJ 06	Mountain House Pkwy ³	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-
SJ 07	Mountain House Pkwy ³	Arnaudo Blvd	I-205	D	3,540	418 to 769	-
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	C	1,920	546 to 1,718	-
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	C	680	42 to 146	-
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009).
- (2) Facility is analyzed as a local facility under Baseline Conditions – roadway is adopted as a State facility after Baseline Year (2009).
- (3) Roadways within the Mountain House CSD have a LOS D threshold, compared to the LOS C threshold used in the remainder of unincorporated San Joaquin County.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Baseline Roadway Physical Conditions

Table 5 summarizes baseline pavement conditions for the study roadway segments. Sixty roadway segments have deficient pavement conditions. For the purpose of this analysis, most local roadway segments are identified as acceptable if the PCI is greater than 55. For roadway segments within the City of Sacramento, a PQI greater than 70 is considered acceptable. For roadway segments within San Joaquin County, an OCI greater than 70 is considered acceptable, except in the Mountain House Community Service District (CSD), which uses the PCI metric. Caltrans roadway segments are identified as acceptable if the IRI was less than or equal to 170. Where deficient conditions are reported, information is provided regarding the extent of the deficiency (i.e., majority of segment length, all of the segment length or minority of segment length).

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

1

TABLE 5: BASELINE ROADWAY PAVEMENT CONDITIONS

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./ San Joaquin Co. Line	Acceptable	-	PCI 100. Improvement project out to bid for summer 2012.
BRE 01	SR 4 (Brentwood Blvd) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	-	PCI range from 79 to 87.
BRE 02	SR 4 (Brentwood Blvd) ¹	Balfour Rd	Brentwood City Limits (South)	Acceptable	-	PCI range from 79 to 87.
BRE 03	Balfour Rd	SR 4 (Brentwood Blvd)	Brentwood City Limits	Acceptable	-	PCI range from 76 to 81.
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	Majority	PCI range from 43 to 75. PCI 43 for 3,000 feet. PCI 50 to 60 for 2,900 feet. PCI 70+ for 2,700'.
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	Majority	PCI range from 34 to 41.
CC 03	SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Majority	IRI range 156 to 280. Minority of segment length is acceptable.
CC 04	Byron Hwy	Delta Rd	SR 4	Acceptable	-	PCI range from 66 to 72. Approximately 15,000 feet (majority of segment length) better than PCI 70.
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	Deficient	Minority	PCI range from 51 to 85. Little more than half study segment (19,850 feet greater than PCI 70).
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Majority	IRI range from 152 to 177. Approximately 1 mile exceeds IRI 170 threshold (majority of segment length).
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Minority	IRI range from 152 to 189. Approximately 0.1 mile exceeds IRI 170 threshold. Vast majority of segment is acceptable.
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	Minority	IRI range from 118 to 207. Approximately 0.6 mile exceeds IRI 170 threshold. Majority of segment is acceptable.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	Minority	IRI range from 142 to 208. Approximately 0.6 mile exceeds IRI 170 threshold. Majority of segment is acceptable.
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	All	IRI range from 182 to 278. All of segment exceeds IRI 170 threshold level.
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	Minority	IRI range from 106 to 172. Majority of segment better than acceptable IRI 170. Approximately 0.4 mile at IRI 172.
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	-	IRI range from 96 to 118.
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	-	IRI range from 114 to 151.
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Majority	IRI range from 124 to 246. Approximately half better than acceptable IRI 170.
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Minority	IRI range from 134 to 208. Approximately 5 miles better than acceptable IRI 170 (majority of segment).
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	Minority	IRI range from 94 to 182. Approximately 0.5 mile exceeds IRI 170 threshold. Majority of segment at better than acceptable range.
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	-	IRI range from 102 to 164.
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	-	IRI range from 82 to 122.
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	-	IRI range from 97 to 123.
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	-	IRI range from 86 to 132.
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	-	IRI range from 100 to 140.
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	-	IRI range from 106 to 144.
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	-	IRI range from 109 to 154.
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Majority	IRI range from 160 to 266.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	-	IRI range from 140 to 167.
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	Majority	IRI range from 146 to 206. Approximately half of segment length exceeds acceptable level.
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	-	IRI range from 148 to 192. Approximately 0.25 miles exceeds IRI 170 threshold. Majority of segment length better than acceptable level.
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	Minority	IRI range from 139 to 184. Majority of segment length better than acceptable level.
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	Minority	IRI range from 113 to 184. Approximately 1.5 miles at or exceeds IRI 170 threshold. Majority of segment is acceptable.
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	Majority	IRI range from 144 to 242. Approximately half segment length exceeds IRI 170 threshold.
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	Majority	IRI range from 166 to 214. Approximately 0.5 mile better than acceptable IRI 170 threshold (minority of segment length).
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	Majority	IRI range from 146 to 221. Approximately 1 mile better than acceptable IRI 170 threshold (minority of segment length).
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	-	Bridge
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	-	IRI range from 132 to 139.
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	All	IRI range from 219 to 236.
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Majority	IRI range from 161 to 234. Approximately 1.2 miles better than acceptable IRI 170 (minority of segment length).

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Majority	IRI range from 131 to 178. Approximately half segment length better than acceptable IRI threshold.
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Majority	IRI range from 157 to 294. Approximately 1 mile better than acceptable (minority of segment length).
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	Majority	IRI range from 122 to 432. Approximately 6 miles better than acceptable (minority of segment length).
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	-	IRI range from 68 to 114.
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	-	IRI range from 92 to 147.
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	-	IRI range from 65 to 167.
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	-	IRI range from 63 to 167.
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	Acceptable	-	IRI range from 93 to 156.
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	Acceptable	-	IRI range from 100 to 118.
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	Deficient	Minority	IRI range from 94 to 249. Approximately 1 mile exceeds IRI 170 threshold (minority of segment length).
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Majority	IRI range 165 to 258. Approximately 2 miles better than acceptable (minority of segment length).
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	-	Bridge
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ San Joaquin Co. Line	Deficient	Majority	IRI range from 135 to 236. Approximately 2.5 miles better than acceptable (minority of segment length).

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
CT 45	SR 12	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Majority	IRI range from 106 to 325. Approximately 3 miles better than acceptable (minority of segment length).
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Minority	IRI range from 145 to 172. Majority of segment better than acceptable.
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	-	IRI range from 142 to 169.
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	-	IRI range from 54 to 162.
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Majority	IRI range from 158 to 250. Approximately 1 mile better than acceptable (minority of segment length).
CT 50	Marsh Creek Rd (Future SR 4) ²	Vasco Rd	SR 4 (Byron Hwy)	Acceptable	-	PCI 91.
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Majority	IRI range from 135 to 248. Approximately half segment length better than acceptable 170 IRI.
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Minority	IRI range from 133 to 293. Approximately 5.5 miles better than acceptable 170 IRI (majority of segment length).
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Majority	IRI range from 82-301. Approximately 1.5 miles better than acceptable 170 IRI (minority of segment length).
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	All	IRI range from 174 to 205.
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	All	IRI range from 192 to 303.
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	-	IRI range from 55 to 137.
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	-	IRI range from 78 to 103.
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	-	IRI range from 71 to 133.
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	-	IRI range from 63 to 132.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	-	IRI range from 70 to 91.
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	-	IRI range from 64 to 96.
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	-	IRI range from 80 to 108.
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	-	IRI range from 77 to 121.
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	-	IRI range from 77 to 108.
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	-	IRI range from 72 to 112.
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	Deficient	Unknown	PCI not available from agency. Observations from Google Maps indicate deficient conditions (image date August 2007)
OAK 01	SR 4 (Main St) ¹	SR 160	Cypress Rd	Deficient	Majority	IRI range from 156 to 260 (minority of segment length acceptable). Pavement conditions supplied by Caltrans. Facility relinquished to local agency in January 2012.
OAK 02	SR 4 (Main St) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	All	IRI 235. Pavement conditions supplied by Caltrans. Facility relinquished to local agency in January 2012.
OAK 03	Cypress Rd	SR 4 (Main Street)	Bethel Island Rd	Acceptable	-	PCI range from 65 to 80.
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	Majority	PCI range from 55 to 80.
OAK 05	Delta Rd	SR 4 (Main Street)	Byron Hwy	Deficient	Majority	PCI 89 from Oakley city limits to Sellers Ave. East of Sellers Ave. (Contra Costa County) PCI range from 61-67.
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	All	PQI 70.
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	-	PQI 84.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	-	Bridge
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	Majority	PCI range from 45 to 67. PCI 45 within Hood (approximately 1000').
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	-	PCI 56.
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	Majority	PCI range from 35 to 59. At least 1 mile at PCI 35.
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	All	PCI 32.
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	-	PCI 84.
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	All	PCI 45.
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	Deficient	All	PCI 24.
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	Majority	PCI range from 43 to 100. PCI 43 and 54 for approximately 1 mile on southernmost section south of Vorden and for one mile south of Paintersville Bridge.
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Minority	PCI range from 48 to 64. Majority of segment length has a PCI of 64. Section through Walnut Grove south of Center Avenue has a PCI of 48.
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ San Joaquin Co. Line	Acceptable	-	PCI 64.
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	-	PCI 85.
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	Majority	PCI range from 36 to 94. Race Track Road has a PCI of 94. All of Tyler Island has PCI 36 (majority of study segment).

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

Segment ID	Roadway	From	To	Condition	Extent of Deficiency¹	Notes
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	All	PCI range from 20 to 36. Tyler Island Bridge Road (Approximately 3,500 feet PCI 20, which on the MTC scale is very poor).
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	-	PCI range from 86 to 94.
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	-	PCI 86.
SJ 01	Walnut Grove Rd	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Minority	OCI range from 55 to 86.
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	All	OCI range from 56 to 60.
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	-	OCI 74.
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	-	OCI range from 78 to 93.
SJ 05	Byron Hwy ³	Alameda Co./ San Joaquin Co. Line	Mountain House Pkwy	Acceptable	-	PCI 68.
SJ 06	Mountain House Pkwy ³	Byron Hwy	Arnaudo Blvd	Acceptable	-	PCI 100.
SJ 07	Mountain House Pkwy ³	Arnaudo Blvd	I-205	Acceptable	-	PCI 100.
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	Majority	PCI range from 15 to 85 projected from 2009 conditions. 6,920 feet of PCI 15 along westernmost extent said to be in poor condition in need of major work. Extensive skin patching last done in 2010.
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	Majority	PCI range from 54 to 89.
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	-	PCI 81. (Last measured in 2005)
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	-	PCI 94. (Last measured in 2005)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Condition	Extent of Deficiency ¹	Notes
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Unknown	Segment between Lake Washington Blvd and Marshall Rd new in 2005. Recent PCI is not available from agency. Observations from Google Maps indicate deficient conditions south of Marshall Road (image date August 2011).
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Unknown	Recent PCI is not available from agency. Observations from Google Maps indicate deficient conditions (image date September 2011)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	Majority	PCI unknown for majority of segment per County. PCI near 100 for section between CR141 and 142. Comment made that most County roads do not have adequate engineering pavement section constructed to a particular TI and are therefore subject to damage under truck loads. Deficiency assumed.
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	Deficient	Majority	PCI unknown per County. Comment made that most County roads do not have adequate engineering pavement section constructed to a particular TI and are therefore subject to damage under truck loads. Deficiency assumed.
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Majority	PCI unknown per County. Comment made that most County roads do not have adequate engineering pavement section constructed to a particular TI and are therefore subject to damage under truck loads. Deficiency assumed.

Source: Fehr & Peers, 2012 based on information supplied by agencies as presented in Table 6.

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009).
- (2) Facility is analyzed as a local facility under Baseline Conditions – roadway is adopted as a State facility after Baseline Year (2009).
- (3) The Mountain House CSD maintains the roadways within the Mountain House Master Plan area, and uses the PCI rating system as opposed to the OCI rating system that is used in the remainder of unincorporated San Joaquin County.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

4. Agency Outreach

In accordance with CEQA Public Resources Code (PRC) Section 21092.4, the lead agency for a project that would have statewide, regional, or area-wide significance is required to consult with the regional transportation planning agency and public agencies that have transportation facilities which could be affected. Statewide, regional, or area-wide significance is defined in CEQA Guidelines Section 15206. All transportation agencies directly impacted by the BDCP project were consulted during the development stages of this analysis. All correspondence with staff was summarized in an outreach matrix. The most appropriate staff contacts at each agency were verified.

Beginning in January 2012, agencies were first contacted regarding the general approach and methodology intended for both the traffic operations and pavement conditions assessment related to construction impacts. Agencies were sent the list of study segments for review and comment. In one case, study segments were adjusted within a jurisdiction to be consistent with current truck routing practices. Subsequently, agencies were requested to supply readily available existing pavement condition information to populate Table 5 in the previous section. Agency representatives were also asked about potential mitigation approaches to address potential pavement condition impacts. Through this outreach, sample mitigation approaches used for similar projects were obtained. Table 6 identifies all agencies contacted as part of this outreach effort.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

**TABLE 6: AGENCIES CONTACTED REGARDING POTENTIAL CONSTRUCTION-RELATED
PROJECT IMPACTS**

Agency	Data Obtained
Alameda County	PCI values via phone conversation 4/29/2012
City of Brentwood	PCI values via email 4/30/2012
Contra Costa County	Contra Costa Current PCI Report 04/04/2012
Caltrans (Headquarters, Districts 3, 4, and 10)	IRI values from Caltrans Maintenance Program 2009 Pavement Summary
City of Isleton	No data provided; pavement condition based on field observation
City of Oakley	PCI values via email 05/03/2012
City of Sacramento	PQI values via email 04/23/2012
Sacramento County	2011 PCI Report for Trench Cut Fee Program
San Joaquin County	OCI values via email 04/23/2012
Mountain House ¹	PCI values via email 05/20/2012
City of Stockton	PCI via email 3/16/2012
City of Tracy	Pavement Management System, Section Description Inventory and Needs Projected PCIs 4/20/2012
City of West Sacramento	PCI values via email 04/20/2012
Yolo County	PCI values via email 03/07/2012; Lower Northwest Intercept Pavement Evaluation Fall 2006 Progress Report; Project Plans for County Road 140 Widening and Rehabilitation Project 12/15/2010

Notes:

Information was also obtained about traffic operations such as applicable vehicle LOS thresholds, but most of this information was accessed from publicly available documents such as general plans on agency websites.

- (1) Mountain House is an unincorporated community within San Joaquin County. The Mountain House Community Service District (CSD) maintains the roadways within the Mountain House Master Plan area, and uses the PCI rating system as opposed to the OCI rating system that is used in the remainder of unincorporated San Joaquin County.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

5. Analysis Criteria

This study developed the construction traffic impact significance criteria outlined below based on the applicable policies of the public agencies whose roadways are likely to be affected by construction traffic within the study area. The criteria address potential impacts to traffic operations and the physical condition of the roadway network.

The traffic operations criteria are based on the LOS policy descriptions in the setting and vary by public agency. LOS thresholds by facility are contained in Table 4 and repeated in Tables 7, 9, 11, 13, and 15. If sufficient reserve capacity exists to accommodate construction traffic within the responsible agency LOS threshold, then no traffic operations impact occurs. If construction vehicle trips cause the total hourly volume to exceed the LOS threshold for any analysis hour, then a potential impact is identified.

The physical condition criteria are based on PCI or IRI values. Most agencies do not have a “threshold” value similar to that for LOS but there is a clear demarcation above which pavement condition is rated as “good” or “acceptable.” For this study, adding construction traffic to a local jurisdiction’s roadway segment with a pavement rating below the threshold stated below would constitute a significant impact. Likewise, adding construction traffic to a Caltrans roadway segment with a paving rating above the threshold stated below would constitute a significant impact.

City of Brentwood Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

City of Isleton Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

City of Oakley Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

City of Tracy Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

City of Sacramento Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PQI rating at or below 70.

City of Stockton Roadways

- Cause traffic operations to deteriorate from LOS E (or better) to LOS F or exacerbate LOS F conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

City of West Sacramento Roadways

- Cause traffic operations to deteriorate from LOS C (or better) to LOS D (or worse) or exacerbate LOS D (or worse) conditions (Jefferson Boulevard and Industrial Boulevard/Lake Washington Boulevard (WS 02, WS 03, and WS 04)).
- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions (Harbor Boulevard (WS 01)).
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

Alameda County Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

Contra Costa County Roadways

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

Sacramento County Roadways

- Cause traffic operations to deteriorate on a rural roadway segment from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions.
- Cause traffic operations to deteriorate on an urban roadway segment from LOS E (or better) to LOS F or exacerbate LOS F conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

San Joaquin County Roadways

- Cause traffic operations to deteriorate from LOS C (or better) to LOS D (or worse) or exacerbate LOS D (or worse) conditions (Walnut Grove Road, Peltier Road, and Tracy Boulevard (SJ 01, SJ 02, SJ 03, and SJ 04)).

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

- Add construction vehicle trips to any roadway segment with an OCI rating at or below 70 (Walnut Grove Road, Peltier Road, and Tracy Boulevard (SJ 01, SJ 02, SJ 03, and SJ 04)).

Mountain House

- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate LOS E (or worse) conditions (Byron Highway and Mountain House Parkway (SJ 05, SJ 06, and SJ 07)).
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55 (Byron Highway and Mountain House Parkway (SJ 05, SJ 06, and SJ 07)).

Yolo County

- Cause traffic operations to deteriorate from LOS C (or better) to LOS D (or worse) or exacerbate LOS D (or worse) conditions.
- Add construction vehicle trips to any roadway segment with a PCI rating at or below 55.

Caltrans

- Cause traffic operations to deteriorate from LOS B to LOS C (or worse) along SR-84 between the West Sacramento city limits and Courtland Road.
- Cause traffic operations to deteriorate from LOS C (or better) to LOS D (or worse) or exacerbate a LOS condition worse than LOS C (I-5 between Twin Cities Road and Eight Mile Road, I-205 between I-580 and Eleventh Street, SR-4 between Discovery Bay Boulevard and Tracy Boulevard, SR-84 between Courtland Road and Cache Slough Ferry, SR-12 between Walters Road/Lawler Ranch Parkway and I-5, SR-113 between SR-12 and I-80, SR-12 between I-80 and Walters Road/Lawler Ranch Parkway, I-80 between Suisun Valley Road and SR-12, I-80 between SR-113 and Pedrick Road, I-5 between Eight Mile Road and Eighth Street).
- Cause traffic operations to deteriorate from LOS D (or better) to LOS E (or worse) or exacerbate a LOS condition worse than LOS D (I-205 between Grant Line Road and MacArthur Drive, SR-4 between SR-160 and Discovery Bay Boulevard, SR-4 between Tracy Boulevard and I-5).
- Cause traffic operations to deteriorate from LOS E (or better) to LOS F (or worse) or exacerbate a LOS condition worse than LOS F (SR-160 between Sacramento City limits and SR-12).
- Cause traffic operations to exacerbate a condition of LOS F (I-5 between Florin Road and Twin Cities Road, SR-160 between Brannan Island Road and SR-12).
- Add construction vehicle trips to any roadway segment with an IRI rating greater than 170.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

6. Impact Analysis

Alternative Alignments Description

The BDCP includes the following five conveyance alternatives.

- Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8)
- Modified Pipeline/Tunnel (Alternative 4)
- East Canal (Alternatives 1B, 2B, and 6B)
- West Canal (Alternatives 1C, 2C, and 6C)
- Through Delta/Separate Corridors (Alternative 9)

This study analyzes the construction-related transportation impacts for each of these conveyance alternatives.

Trip Generation – Peak Construction Month

Construction activity will generate vehicle trips related to site-worker commutes and movement of construction equipment, materials and spoils. This analysis uses the conceptual project design information for each alternative, proposed construction schedule, and construction trip estimates provided by ICF to determine the amount of construction traffic generated by the proposed project. The proposed construction schedule and trip estimates are based upon the data provided by DWR, and include both employee and truck trips (see Appendix 22A for additional information on the construction schedule and assumptions).

The conceptual project design information was used to identify project features, such as intakes, pumping plants, pipelines, canals, forebays, bridges, and siphons for each conveyance alternative. Project features located in proximity to each other were grouped to create informal “construction zones,” or areas where construction routes are likely to be similar.

To determine the amount of construction vehicle trips generated by each construction zone, the analysis uses the proposed construction schedule for each conveyance alternative to determine when construction traffic would be expected to occur and which activities would occur simultaneously. Given the approximate 10 year construction schedule, the monthly construction activity was reviewed to identify peak construction year and month for construction activity in each construction zone.

Lastly, the estimates of the number of trips by site-worker vehicles and equipment/material trucks for the construction activities occurring in the peak construction month were compiled for each construction zone. The analysis assumes that all construction site-workers are expected to generate two trips per day – one arriving to the construction site and one departing the construction site. All construction related

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

trucks are expected to each generate eight trips per day. All construction trips are assigned to the roadway network for each analysis hour (which is inherently conservative).

Background Traffic Growth

To reflect the change in traffic patterns between baseline conditions and the peak construction period, background traffic volumes were developed by factoring up the baseline volumes based on traffic growth rates obtained from the following regional travel demand models.

- Sacramento Area Council of Governments (SACOG) SACMET TDF model
- San Joaquin Council of Governments (SJCOG) TDF model
- Contra Costa Transportation Authority (CCTA) TDF model
- Solano Transportation Authority (STA) TDF model

The regional models forecast traffic volume changes based on population and employment growth, as well as changes in the transportation network. Given the amount of time that will pass before construction begins, this scenario represents likely traffic conditions when project construction is expected to occur and provides the most meaningful basis for identifying potential project impacts. The final traffic volumes, which apply the socioeconomic growth rates, represent Baseline Plus Background Growth (BPPG) conditions. Project construction trips are added to the BPPG volumes to identify potential impacts.

In a limited number of circumstances, the background traffic volume is anticipated to decrease due to the opening of a new transportation facility. For example, the opening of the SR 4 Bypass Road in eastern Contra Costa County will decrease the baseline traffic volumes along the baseline SR 4 alignment through downtown Brentwood and Oakley. Only improvements for which the relevant jurisdiction has fully funded and explicitly committed to constructing prior to the anticipated start of construction for the project are included in the BPPG scenario.

Trip Distribution and Assignment

Construction traffic is expected to use adjacent local and regional roadways to access the major regional highways and adjacent metropolitan areas. Using the project design information and the location of each construction zone, this study identifies the potential roadways that would likely be used to access each project construction site. Since specific project trip routing is unknown at this time, the analysis assigns construction trips to all routes that provide the quickest and most direct access to the surrounding major regional highways, such as I-5, I-80, I-205, and the SR 4 Bypass. The final result is an estimate of hourly traffic volumes on each study segment that represent 'Baseline Plus Background Growth Plus Project' (BPPGPP) conditions, which is used to determine potential impacts.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Project Roadway Traffic Operations Analysis and Physical Conditions Assessment

This study analyzes roadway traffic operations by comparing the hourly traffic volumes to the LOS volume thresholds shown in Table 2. The hourly LOS volume thresholds are based on the LOS policies established by each jurisdiction as described in Section 5. A significant impact would occur if the hourly traffic volumes generated by project construction exceed an acceptable LOS threshold or exacerbates a condition where the LOS already exceeds the LOS threshold under BPBG conditions (see Section 5, *Analysis Criteria*).

This analysis also assesses the project's impacts to the physical conditions of study roadway segments. As described in Section 5, construction of the project will result in a potential impact to a study roadway's physical condition if construction traffic is added to a roadway with deficient pavement conditions under baseline conditions.

An intersection-level analysis was not performed because sufficient information regarding construction traffic patterns is not available for this level of analysis and it would be speculative and potentially misleading to assign construction related traffic by turning movement. The roadway segment analysis is sufficient to identify project impacts and to develop mitigation measures given the information available regarding construction traffic. By conducting an hourly "worst-case" scenario segment analysis, the traffic impact study identified critical time periods during the day that may need to be avoided or where physical improvements may be required. These critical periods include peak commute hours for the study roadways.

The following sections describe the resulting roadway operations for each conveyance alternative in further detail.

Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8)

The pipeline/tunnel alternatives would convey water from the north Delta to the south Delta through a series of pipelines and tunnels. Construction activity under this alignment includes constructing intakes and pumping plants in the north Delta region, pipelines and tunnels to convey the water south, an intermediate forebay near Stone Lake, and a forebay and control structures in the south Delta area.

Table 7 summarizes the Baseline, BPBG, and BPBGPP LOS for the study roadway segments under the pipeline/tunnel alternatives. Table 7 also identifies the number of occurrences and the respective time frame when roadway segments exceed the hourly volume LOS threshold for each scenario. The results presented in Table 7 reveal that 25 roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM period under BPBG conditions and 47 roadway segments exceed the LOS threshold for at least one hour under BPBGPP conditions for the pipeline/tunnel alternatives.

Table 8 summarizes the baseline plus project pavement impacts for the study roadway segments. The results presented in Table 8 indicate that construction activity related to the pipeline/tunnel alternatives would result in a potential impact to the physical conditions on 47 of the study roadway segments.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1

TABLE 7: PIPELINE/TUNNEL (ALTERNATIVES 1A, 2A, 3, 5, 6A, 7, AND 8) PROJECT ROADWAY TRAFFIC OPERATIONS

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./ Alameda Co. Line	Alameda Co./San Joaquin Co. Line	D	1,600	385 to 656	-	485 to 827	-	1,435 to 1,777	6 (6-9AM; 3-6PM)
BRE 01	Brentwood Blvd (old SR 4) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)	-	-	-	-
				D	1,760	-	-	599 to 1,549	-	1,549 to 2,499	12 (7AM-7PM)
BRE 02	Brentwood Blvd (old SR 4) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-	-	-	-	-
				D	3,540	-	-	374 to 1,026	-	1,324 to 1,976	-
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	D	3,540	437 to 1,300	-	551 to 1,638	-	591 to 1,678	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-	156 to 416	-	196 to 456	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-	113 to 374	-	153 to 414	-
CC 03	Old SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)	-	-	-	-
				D	1,600	-	-	1,332 to 1,977	4 (7-8AM; 3-6PM)	2,282 to 2,927	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4	D	1,410	108 to 240	-	109 to 243	-	149 to 283	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-	609 to 1,143	-	1,559 to 2,093	11 (6-10AM; 12-7PM)
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-	3,168 to 7,121	1 (7-8AM)	3,548 to 7,501	2 (7-9AM)
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-	1,972 to 6,831	2 (4-6PM)	2,352 to 7,211	2 (4-6PM)
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-	2,710 to 5,924	-	2,750 to 5,964	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-	1,790 to 6,083	1 (5-6PM)	1,830 to 6,123	1 (5-6PM)
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-	2,137 to 3,921	-	2,177 to 3,961	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-	1,469 to 3,903	-	1,509 to 3,943	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-	1,808 to 2,599	-	2,393 to 3,184	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-	1,474 to 2,707	-	2,509 to 3,292	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-	1,749 to 2,289	-	2,469 to 3,009	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-	1,494 to 2,432	-	2,214 to 3,152	-
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-	1,619 to 2,122	-	2,204 to 2,707	-
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-	1,371 to 2,237	-	1,956 to 2,822	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-	1,814 to 2,380	-	1,949 to 2,515	-
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-	1,489 to 2,500	-	1,624 to 2,635	-
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-	1,876 to 2,488	-	1,916 to 1,528	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-	1,511 to 2,606	-	1,551 to 2,646	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-	1,825 to 2,745	-	1,700 to 2,620	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-	1,484 to 1,956	-	1,609 to 2,081	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-	1,962 to 2,902	-	2,087 to 3,027	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-	1,591 to 2,650	-	1,716 to 2,775	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-	2,479 to 4,419	-	2,519 to 4,459	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-	2,326 to 3,533	-	2,366 to 3,573	-
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-	164 to 574	-	924 to 1,334	-
CT 24	SR 160 (Freeport Blvd/ River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-	94 to 180	-	854 to 940	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-	41 to 125	-	801 to 885	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-	129 to 208	-	1,294 to 1,373	-
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-	79 to 140	-	1,244 to 1,305	-
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-	84 to 167	-	1,249 to 1,332	-
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-	102 to 168	-	1,267 to 1,333	-
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-	173 to 465	-	1,608 to 1,900	3 (2-5PM)
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-	193 to 378	-	1,628 to 1,813	3 (3-6PM)
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-	592 to 999	-	1,542 to 1,949	3 (3-6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-	46 to 196	-	996 to 1,146	13 (6AM–7PM)
CT 34	SR 84 (Courtland Rd/ Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-	11 to 28	-	51 to 68	-
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-	4,064 to 9,232	3 (3-6PM)	4,894 to 10,062	5 (2-7PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)	7,591 to 11,737	8 (6–10AM; 2–6PM)	8,421 to 12,567	13 (6AM–7PM)
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-	708 to 2,475	-	1,538 to 3,305	4 (3-7PM)
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-	1,111 to 2,178	-	1,941 to 3,008	2 (6-8PM)
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-	3,183 to 4,772	-	4,348 to 5,887	5 (12-1PM; 3-7PM)
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-	2,153 to 3,153	-	3,318 to 4,318	-
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9-1PM; 2-6PM)	840 to 1,441	13 (6AM–7PM)	2,005 to 2,606	13 (6AM–7PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM–7PM)	1,438 to 2,069	13 (6AM–7PM)	2,603 to 3,234	13 (6AM–7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM–7PM)	1,521 to 2,258	13 (6AM–7PM)	2,686 to 3,423	13 (6AM–7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ SJ Co. Line	C	790	704 to 1,030	12 (6AM–6PM)	887 to 1,298	13 (6AM–7PM)	1,137 to 1,548	13 (6AM–7PM)
CT 45	SR 12	Sacramento Co./ SJ Co. Line	I-5	C	790	773 to 1,164	12 (6AM–6PM)	859 to 1,294	13 (6AM–7PM)	1,109 to 1,544	13 (6AM–7PM)
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5PM)	3,151 to 5,820	6 (7–9AM; 2–6PM)	3,626 to 6,295	9 (7-9AM; 12- 7PM)
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-	3,599 to 4,916	4 (7–8AM; 3–6PM)	4,074 to 5,391	9 (6–10AM; 1–6PM)
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-	569 to 1,341	-	1,519 to 2,291	9 (8-9AM; 11AM- 7PM)
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-	219 to 370	-	1,169 to 1,320	13 (6AM–7PM)
CT 50	SR 4 (Marsh Creek Rd) ²	Vasco Rd	Byron Hwy (Old SR 4)	D	1,600	442 to 733	-	-	-	-	-
				C	790	-	-	557 to 924	2 (4–6PM)	1,507 to 1,874	13 (6AM–7PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-	661 to 1,460	-	1,611 to 2,410	13 (6AM–7PM)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-	412 to 746	-	1,362 to 1,696	13 (6AM–7PM)
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)	867 to 1,492	1 (4–5PM)	1,817 to 2,442	13 (6AM–7PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-	3,244 to 6,121	-	3,719 to 6,596	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-	5,826 to 7,572	3 (7–8AM; 4–6PM)	6,301 to 8,047	5 (7–8AM; 2- 6PM)
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-	3,208 to 6,054	3 (3–6PM)	3,683 to 6,529	4 (2–6PM)
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)	5,720 to 7,433	13 (6AM–7PM)	6,195 to 7,908	13 (6AM–7PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)	1,647 to 6,188	5 (2–7PM)	2,122 to 6,663	5 (2–7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)	2,296 to 5,967	3 (6–9AM)	2,771 to 6,442	4 (6–10AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)	1,832 to 6,487	5 (2–7PM)	2,307 to 6,962	6 (1–7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-	2,400 to 5,270	2 (6-8AM)	2,875 to 5,745	4 (6-10AM)
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-	1,952 to 5,376	-	2,107 to 5,531	1 (4-5PM)
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-	2,371 to 3,941	-	2,526 to 4,096	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-	1,934 to 5,353	-	2,089 to 5,508	3 (3-6PM)
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-	2,666 to 4,411	-	2,821 to 4,566	-
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-	17 to 75	-	57 to 115	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
OAK 01	Main Street (Old SR 4) ¹	SR 160	Cypress Rd	C	1,920	752 to 1,663		-	-	-	
				D	3,540	-	-	893 to 1,975	-	1,843 to 2,925	-
OAK 02	Main Street (Old SR 4) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)	-	-	-	-
				D	1,760	-	-	953 to 1,762	1 (3-4PM)	1,903 to 2,712	13 (6AM-7PM)
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	D	1,600	304 to 764	-	383 to 963	-	423 to 1,003	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-	176 to 462	-	216 to 502	-
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	D	1,410	155 to 334	-	158 to 340	-	198 to 380	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-	789 to 2,191	-	1,549 to 2,951	-
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-	192 to 620	-	952 to 1,380	-
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-	121 to 428	-	161 to 468	-
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137		87 to 154	-	1,387 to 1,454	9 (6-7AM; 8-10AM; 11AM-12PM; 2-7PM)
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-	12 to 35	-	1,177 to 1,200	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-	20 to 40	-	1,185 to 1,205	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-	42 to 73	-	82 to 113	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-	139 to 264	-	409 to 534	-
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-	166 to 374	-	206 to 414	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-	64 to 142	-	1,014 to 1,092	-
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-	87 to 138	-	212 to 263	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-	238 to 390	-	508 to 660	-
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	D	1,410	175 to 332	-	190 to 360	-	460 to 630	-
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-	61 to 283	-	196 to 418	-
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-	18 to 37	-	153 to 172	-
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-	14 to 39	-	54 to 79	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-	5 to 67	-	45 to 107	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-	20 to 66	-	60 to 106	-
SJ 01	Walnut Grove Rd	Sacramento Co./ SJ Co. Line	I-5	C	790	141 to 232	-	153 to 251	-	423 to 521	-
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-	8 to 23	-	48 to 63	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-	108 to 209	-	413 to 514	-
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-	87 to 215	-	392 to 520	-
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	D	1,600	521 to 824	-	656 to 1,038	-	1,606 to 1,988	13 (6AM-7PM)
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-	239 to 375	-	1,189 to 1,325	-
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	D	3,540	418 to 769	-	552 to 1,015	-	1,502 to 1,965	-
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-	389 to 969	-	429 to 1,006	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-	389 to 956	-	694 to 1,261	-
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-	1,394 to 2,832	-	2,344 to 3,782	3 (7-8AM; 4-6PM)
WS 02	Industrial Blvd/ Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-	974 to 2,341	2 (7-8AM; 5-6PM)	1,924 to 3,291	13 (6AM-7PM)
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	C	1,920	546 to 1,718	-	675 to 2,125	1 (5-6PM)	1,625 to 3,075	11 (7-9AM; 11AM-7PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	C	680	42 to 146	-	51 to 176	-	1,001 to 1,126	13 (6AM-7PM)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-	79 to 266	-	119 to 306	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-	32 to 79	-	982 to 1,029	13 (6AM-7PM)
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-	35 to 97	-	985 to 1,047	13 (6AM-7PM)

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions and a local facility under Baseline Plus Construction Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009). LOS Threshold is LOS C under Baseline Conditions and changes to LOS D under Baseline Plus Construction Conditions.
- (2) Facility is analyzed as a local facility under Baseline Conditions and a Caltrans facility under Baseline Plus Construction Conditions – roadway is adopted as a State facility after Baseline Year (2009). LOS Threshold is LOS D under Baseline Conditions and changes to LOS C under Baseline Plus Construction Conditions.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1

TABLE 8: PIPELINE/TUNNEL (ALTERNATIVES 1A, 2A, 3, 5, 6A, 7, AND 8) PROJECT ROADWAY PAVEMENT IMPACTS

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line	Acceptable	Yes	No
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	Yes	No
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Acceptable	Yes	No
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	Acceptable	Yes	No
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	Yes	Yes
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	Yes	Yes
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Yes	Yes
CC 04	Byron Hwy	Delta Rd	Old SR 4	Acceptable	Yes	No
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	Deficient	Yes	Yes
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	No	No
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	No	No
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	Yes	Yes
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	Yes	No
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	Yes	No
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	Yes	No
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Yes	Yes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	Yes	No
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	Yes	Yes
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	Yes	No
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	Yes	Yes
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	Yes	Yes
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	Yes	Yes
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	Yes	Yes
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	Yes	Yes
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	Yes	No
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	Yes	No
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	Yes	Yes
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Yes	Yes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Yes	Yes
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	No	No
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	Yes	No
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	Yes	No
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	Yes	No
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	Yes	No
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	Acceptable	Yes	No
CT 40	SR 12	Sunset Ave/Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy	Acceptable	Yes	No
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	Deficient	Yes	Yes
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Yes	Yes
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	Yes	No
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Deficient	Yes	Yes
CT 45	SR 12	Sacramento Co./SJ Co. Line	I-5	Deficient	Yes	Yes
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Yes	Yes
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	Yes	No
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	Yes	No
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Yes	Yes
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Acceptable	Yes	No
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Yes	Yes
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Yes	Yes
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	Deficient	No	No
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Deficient	Yes	Yes
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	Yes	Yes
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	Acceptable	No	No
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	No	No
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	Deficient	No	No
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	Yes	Yes
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	Yes	No
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	No	No
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	Yes	No
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	Yes	Yes
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	No	No
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	Yes	No
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	No	No
SC 08	Sutter Slough Bridge Rd	Sacramento Co./Yolo Co. Line	Paintersville Bridge	Deficient	Yes	Yes
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	Yes	Yes
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Yes	Yes
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./SJ Co. Line	Acceptable	Yes	No
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	Yes	No
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	Yes	Yes
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	No	No
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	No	No
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	No	No
SJ 01	Walnut Grove Rd	Sacramento Co./SJ Co. Line	I-5	Deficient	Yes	Yes
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	No	No
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	Yes	No
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	Yes	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	Acceptable	Yes	No
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	Acceptable	Yes	No
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	Acceptable	Yes	No
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	No	No
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	Yes	Yes
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	Yes	No
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	Yes	No
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Yes	Yes
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Yes	Yes
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	No	No
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Deficient	Yes	Yes
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Yes	Yes

1

2

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Modified Pipeline/Tunnel (Alternative 4)

The modified pipeline/tunnel alignment is similar to the pipeline/tunnel alignment in that it would convey water from the north Delta to the south Delta through a series of pipelines and tunnels. The alignment is similar to the pipeline/tunnel conveyance alternative north of Lambert Road and south of SR 12. Between Lambert Road and SR 12, the modified pipeline/tunnel alignment would travel east of the pipeline/tunnel alignment. Construction activity under the modified pipeline/tunnel alignment includes construction of intakes and pumping plants in the north Delta region, pipelines and tunnels to convey the water south, an intermediate forebay near Twin Cities Road, and modifications to the Clifton Court Forebay in the south Delta area.

Table 9 summarizes the Baseline, BPBG, and BPBGPP LOS for the study roadway segments under the modified pipeline/tunnel alignment. Table 9 also identifies the number of occurrences and the respective time frame when roadway segments exceed the hourly volume LOS threshold for each scenario. The results presented in Table 9 reveal that 23 roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM period under BPBG conditions and 38 roadway segments exceed the LOS threshold for at least one hour under BPBGPP conditions for the modified pipeline/tunnel alignment.

Table 10 summarizes the baseline plus project pavement impacts for the study roadway segments. The results presented in Table 10 indicate that construction activity related to the modified pipeline/tunnel alignment would result in a potential impact to the physical conditions on 46 of the study roadway segments.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1 **TABLE 9: MODIFIED PIPELINE/TUNNEL (ALTERNATIVE 4) PROJECT ROADWAY TRAFFIC OPERATIONS**

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./ Alameda Co. Line	Alameda Co./San Joaquin Co. Line	D	1,600	385 to 656	-	477 to 813	-	1,097 to 1,433	-
BRE 01	Brentwood Blvd (old SR 4) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)	-	-	-	-
				D	1,760	-	-	598 to 1,547	-	1,218 to 2,167	9 (8-9AM; 11-7PM)
BRE 02	Brentwood Blvd (old SR 4) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-	-	-	-	-
				D	3,540	-	-	373 to 1,025	-	993 to 1,645	-
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	D	3,540	437 to 1,300	-	542 to 1,612	-	922 to 1,992	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-	154 to 409	-	239 to 494	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-	112 to 368	-	197 to 453	-
CC 03	Old SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)	-	-	-	-
				D	1,600	-	-	1,320 to 1,959	4 (7-8AM; 3-6PM)	1,940 to 2,579	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4	D	1,410	108 to 240	-	109 to 243	-	194 to 328	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-	599 to 1,125	-	1,219 to 1,745	4 (7-9AM; 3- 4PM; 5-6PM)
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-	3,131 to 7,039	1 (7-8AM)	3,336 to 7,244	1 (7-8AM)
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-	1,952 to 6,761	2 (4-6PM)	2,157 to 6,966	2 (4-6PM)
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-	2,688 to 5,876	-	2,793 to 5,981	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-	1,775 to 6,031	-	1,880 to 6,136	1 (5-6PM)
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-	2,118 to 3,885	-	2,223 to 3,990	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-	1,456 to 3,868	-	1,561 to 3,973	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-	1,789 to 2,572	-	2,279 to 3,062	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-	1,458 to 2,678	-	1,948 to 3,168	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-	1,728 to 2,262	-	1,933 to 2,467	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-	1,476 to 2,402	-	1,681 to 2,607	-
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-	1,600 to 2,097	-	2,090 to 2,587	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-	1,355 to 2,211	-	1,845 to 2,701	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-	1,786 to 2,344	-	1,901 to 2,459	-
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-	1,466 to 2,462	-	1,581 to 2,577	-
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-	1,847 to 2,451	-	1,952 to 2,556	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-	1,489 to 2,566	-	1,594 to 2,671	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-	1,674 to 2,581	-	1,779 to 2,686	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-	1,461 to 1,927	-	1,566 to 2,032	-
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-	1,932 to 2,856	-	2,037 to 2,961	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-	1,566 to 2,608	-	1,671 to 2,713	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-	2,441 to 4,350	-	2,546 to 4,455	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-	2,289 to 3,478	-	2,394 to 3,583	-
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-	162 to 566	-	572 to 976	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 24	SR 160 (Freeport Blvd/ River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-	94 to 180	-	504 to 590	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-	41 to 125	-	451 to 535	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-	127 to 206	-	747 to 826	-
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-	79 to 139	-	699 to 759	-
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-	83 to 166	-	703 to 786	-
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-	100 to 166	-	720 to 786	-
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-	173 to 465	-	793 to 1,085	-
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-	193 to 378	-	813 to 998	-
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-	587 to 991	-	1,207 to 1,611	-
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-	46 to 194	-	666 to 814	13 (6AM-7PM)
CT 34	SR 84 (Courtland Rd/ Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-	11 to 28	-	126 to 143	-

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-	4,003 to 9,092	3 (3-6PM)	4,493 to 9,582	4 (2-6PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)	7,476 to 11,560	6 (6-9AM; 3- 6PM)	7,966 to 12,050	10 (6-11AM; 1- 6PM)
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-	697 to 2,438	-	1,187 to 2,928	2 (5-7PM)
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-	1,094 to 2,145	-	1,584 to 2,635	-
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-	3,137 to 4,655	-	3,757 to 5,275	2 (3-5PM)
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-	2,121 to 3,106	-	2,741 to 3,726	-
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9- 1PM; 2-6PM)	828 to 1,419	13 (6AM-7PM)	1,448 to 2,039	13 (6AM-7PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM-7PM)	1,416 to 2,038	13 (6AM-7PM)	2,036 to 2,658	13 (6AM-7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM-7PM)	1,498 to 2,224	13 (6AM-7PM)	2,118 to 2,844	13 (6AM-7PM)
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ SJ Co. Line	C	790	704 to 1,030	12 (6AM-6PM)	873 to 1,277	13 (6AM-7PM)	988 to 1,392	13 (6AM-7PM)
CT 45	SR 12	Sacramento Co./ SJ Co. Line	I-5	C	790	773 to 1,164	12 (6AM-6PM)	853 to 1,284	13 (6AM-7PM)	968 to 1,399	13 (6AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5PM)	3,108 to 5,741	6 (7-9AM; 2- 6PM)	3,418 to 6,051	7 (6-9AM; 1- 6PM)
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-	3,563 to 4,867	4 (7-8AM; 3- 6PM)	3,873 to 5,177	6 (6-9AM; 3- 6PM)
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-	569 to 1,341	-	1,189 to 1,961	2 (4-6PM)
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-	216 to 365	-	836 to 985	13 (6AM-7PM)
CT 50	SR 4 (Marsh Creek Rd) ²	Vasco Rd	Byron Hwy (Old SR 4)	D	1,600	442 to 733	-	-	-	-	-
				C	790	-	-	548 to 909	2 (4-6PM)	1,168 to 1,529	13 (6AM-7PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-	654 to 1,445	-	1,274 to 2,065	11 (8AM-7PM)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-	412 to 746	-	1,032 to 1,366	13 (6AM-7PM)
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)	867 to 1,492	1 (4-5PM)	1,487 to 2,112	13 (6AM-7PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-	3,201 to 6,039	-	3,821 to 6,659	-
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-	5,747 to 7,468	2 (7-8AM; 5- 6PM)	6,367 to 8,088	5 (7-8AM; 2- 6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-	3,159 to 5,962	3 (3-6PM)	3,779 to 6,582	4 (2-6PM)
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)	5,633 to 7,320	13 (6AM-7PM)	6,253 to 7,940	13 (6AM-7PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)	1,629 to 6,118	5 (2-7PM)	1,939 to 6,428	5 (2-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)	2,270 to 5,898	3 (6-9AM)	2,580 to 6,208	3 (6-9AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)	1,803 to 6,386	5 (2-7PM)	2,113 to 6,696	5 (2-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-	2,363 to 5,187	2 (6-8AM)	2,673 to 5,497	3 (6-9AM)
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-	1,922 to 5,292	-	1,967 to 5,337	-
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-	2,334 to 3,880	-	2,379 to 3,925	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-	1,904 to 5,269	-	1,949 to 5,314	-
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-	2,625 to 4,342	-	2,670 to 4,387	-
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-	17 to 75	-	62 to 120	-
OAK 01	Main Street	SR 160	Cypress Rd	C	1,920	752 to 1,663	-	-	-	-	-

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

ID	Segment (Old SR 4) ¹	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
				D	3,540	-	-	882 to 1,951	-	1,502 to 2,571	-
OAK 02	Main Street (Old SR 4) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)	-	-	-	-
				D	1,760	-	-	939 to 1,736	-	1,559 to 2,356	12 (7AM-7PM)
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	D	1,600	304 to 764	-	377 to 947	-	422 to 992	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-	174 to 455	-	219 to 500	-
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	D	1,410	155 to 334	-	157 to 339	-	202 to 384	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-	789 to 2,191	-	1,199 to 2,601	-
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-	188 to 610	-	598 to 1,020	-
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-	119 to 421	-	164 to 466	-
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137		86 to 153	-	706 to 773	-
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-	12 to 35	-	632 to 655	-
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-	20 to 40	-	640 to 660	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-	42 to 73	-	662 to 693	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-	138 to 263	-	543 to 668	-

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-	164 to 370	-	209 to 415	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-	63 to 140	-	683 to 760	-
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-	87 to 138	-	132 to 183	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-	237 to 388	-	642 to 793	-
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	D	1,410	175 to 332	-	188 to 357	-	418 to 587	-
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-	61 to 283	-	106 to 328	-
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-	18 to 36	-	63 to 81	-
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-	14 to 39	-	59 to 84	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-	5 to 66	-	50 to 111	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-	20 to 64	-	65 to 109	-
SJ 01	Walnut Grove Rd	Sacramento Co./ SJ Co. Line	I-5	C	790	141 to 232	-	152 to 250	-	382 to 480	-
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-	8 to 23	-	53 to 68	-
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-	108 to 209	-	483 to 584	-
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-	86 to 212	-	461 to 587	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkw	D	1,600	521 to 824	-	646 to 1,022	-	1,266 to 1,642	4 (7-8AM; 3- 6PM)
SJ 06	Mountain House Pkw	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-	236 to 370	-	856 to 990	-
SJ 07	Mountain House Pkw	Arnaudo Blvd	I-205	D	3,540	418 to 769	-	543 to 1,000	-	1,163 to 1,620	-
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-	383 to 954	-	428 to 999	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-	383 to 941	-	758 to 1,316	-
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-	1,374 to 2,793	-	1,994 to 3,413	-
WS 02	Industrial Blvd/ Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-	959 to 2,304	2 (7-8AM; 5- 6PM)	1,579 to 2,924	9 (7-9AM; 12- 7PM)
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkw	C	1,920	546 to 1,718	-	665 to 2,094	1 (5-6PM)	1,285 to 2,714	6 (7-9AM; 3- 7PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkw	West Sacramento City Limits	C	680	42 to 146	-	50 to 174	-	670 to 794	12 (7AM-7PM)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-	79 to 265	-	124 to 310	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions (3)	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-	31 to 78	-	651 to 698	2 (8-9AM; 5- 6PM)
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-	35 to 95	-	655 to 715	4 (7-8AM; 3- 6PM)

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions and a local facility under Baseline Plus Construction Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009). LOS Threshold is LOS C under Baseline Conditions and changes to LOS D under Baseline Plus Construction Conditions.
- (2) Facility is analyzed as a local facility under Baseline Conditions and a Caltrans facility under Baseline Plus Construction Conditions – roadway is adopted as a State facility after Baseline Year (2009). LOS Threshold is LOS D under Baseline Conditions and changes to LOS C under Baseline Plus Construction Conditions.
- (3) Modified pipeline/tunnel (Alternative 4) construction traffic estimates for construction of the pipelines, intermediate Forebay, intermediate outlet are based on construction features shared with the pipeline/tunnel alternatives. This analysis does not reflect potential reductions in construction traffic associated with the modified pipeline/tunnel for these features due to differences in the scale of construction activity. Traffic volumes for all other construction features (e.g., intakes, pumping plants) are based on estimates specific to the modified pipeline/tunnel alignment.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1 **TABLE 10: MODIFIED PIPELINE/TUNNEL (ALTERNATIVE 4) PROJECT ROADWAY PAVEMENT IMPACTS**

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./ San Joaquin Co. Line	Acceptable	Yes	No
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	Yes	No
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Acceptable	Yes	No
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	Acceptable	Yes	No
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	No	No
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	No	No
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Yes	Yes
CC 04	Byron Hwy	Delta Rd	Old SR 4	Acceptable	Yes	No
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	Deficient	Yes	Yes
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	Yes	Yes
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	Yes	Yes
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	Yes	Yes
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	Yes	No
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	Yes	No
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	Yes	No
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Yes	Yes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	Yes	No
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	No	No
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	Yes	No
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	Yes	Yes
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	Yes	Yes
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	Yes	Yes
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	Yes	Yes
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	Yes	Yes
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	Yes	No
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	Yes	No
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	Yes	Yes
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Yes	Yes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Yes	Yes
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	No	No
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	Yes	No
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	Yes	No
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	Yes	No
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	Yes	No
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	Acceptable	Yes	No
CT 40	SR 12	Sunset Ave/Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy	Acceptable	Yes	No
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	Deficient	Yes	Yes
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Yes	Yes
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	Yes	No
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Deficient	Yes	Yes
CT 45	SR 12	Sacramento Co./San Joaquin Co. Line	I-5	Deficient	Yes	Yes
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Yes	Yes
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	Yes	No
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	Yes	No
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Yes	Yes
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Acceptable	Yes	No
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Yes	Yes
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Yes	Yes
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	Deficient	No	No
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Deficient	Yes	Yes
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	Yes	Yes
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	Acceptable	No	No
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	No	No
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	Deficient	No	No
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	Yes	No
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	No	No
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	Yes	Yes
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	Yes	No
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	Yes	Yes
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	Yes	Yes
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	Yes	No
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	No	No
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	Deficient	Yes	Yes
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	No	No
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Yes	Yes
SC 11	Walnut Grove Rd/ River Rd	Walnut Grove Bridge	Sacramento Co./ San Joaquin Co. Line	Acceptable	Yes	No
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	No	No
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	No	No
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	No	No
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	No	No
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	No	No
SJ 01	Walnut Grove Rd	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Yes	Yes
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	No	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions (1)	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	Yes	No
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	Yes	No
SJ 05	Byron Hwy	Alameda Co./ San Joaquin Co. Line	Mountain House Pkwy	Acceptable	Yes	No
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	Acceptable	Yes	No
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	Acceptable	Yes	No
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	No	No
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	Yes	Yes
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	Yes	No
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	Yes	No
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Yes	Yes
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Yes	Yes
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	No	No
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Deficient	Yes	Yes
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Yes	Yes

Notes:

- (1) Modified pipeline/tunnel (Alternative 4) construction traffic estimates for construction of the pipelines, intermediate Forebay, intermediate outlet are based on construction features shared with the pipeline/tunnel alternatives. This analysis does not reflect potential reductions in construction traffic associated with the modified pipeline/tunnel for these features due to differences in the scale of construction activity. Traffic volumes for all other construction features (e.g., intakes, pumping plants) are based on estimates specific to the modified pipeline/tunnel alignment.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

East Canal (Alternatives 1B, 2B, and 6B)

The east canal alternatives would divert water from the north Delta via intakes and pipelines on the east bank of the Sacramento River to a canal along the eastern side of the Delta. The canal would carry water by gravity from the north Delta to the south Delta assisted by an intermediate pumping plant. Construction activity under this alternative alignment includes constructing intakes and pumping plants in the north Delta region, canals to carry the water south, siphons and bridges at other waterways and roadways, and a forebay and control structures in the south Delta area.

Table 11 summarizes the Baseline, BPBG, and BPBGPP LOS for the study roadway segments under the east canal alternatives. Table 11 also identifies the number of occurrences and the respective time frame when roadway segments exceed the hourly volume LOS threshold for each scenario. The results presented in Table 11 indicate that 20 roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM period under BPBG conditions and 48 roadway segments exceed the LOS threshold for at least one hour under BPBGPP conditions for the east canal alternatives.

Table 12 summarizes the baseline plus project pavement impacts for the study roadway segments. The results presented in Table 12 indicate that construction activity related to the east canal alternatives would result in a significant impact to the physical conditions on 48 of the study roadway segments.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 11: EAST CANAL (ALTERNATIVES 1B, 2B, AND 6B) PROJECT ROADWAY TRAFFIC OPERATIONS

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./ Alameda Co. Line	Alameda Co./San Joaquin Co. Line	D	1,600	385 to 656	-	431 to 735	-	956 to 1,260	-
BRE 01	Brentwood Blvd (old SR 4) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)	-	-	-	-
				D	1,760	-	-	592 to 1,531	-	1,262 to 2,201	9 (8-9AM; 11-7PM)
BRE 02	Brentwood Blvd (old SR 4) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-	-	-	-	-
				D	3,540	-	-	371 to 1,019	-	1,041 to 1,689	-
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	D	3,540	437 to 1,300	-	489 to 1,456	-	554 to 1,521	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-	139 to 370	-	204 to 435	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-	101 to 333	-	166 to 398	-
CC 03	Old SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)	-	-	-	-
				D	1,600	-	-	1,245 to 1,848	3 (3-6PM)	1,915 to 2,518	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4	D	1,410	108 to 240	-	109 to 241	-	174 to 306	-
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-	541 to 1,016	-	1,066 to 1,541	-
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-	2,914 to 6,552	1 (7-8AM)	3,554 to 7,192	1 (7-8AM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-	1,830 to 6,338	2 (4–6PM)	2,470 to 6,978	2 (4–6PM)
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-	2,557 to 5,588	-	2,622 to 5,653	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-	1,682 to 5,716	-	1,747 to 5,781	-
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-	1,999 to 3,667	-	2,064 to 3,732	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-	1,375 to 3,653	-	1,440 to 3,718	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-	1,675 to 2,408	-	2,315 to 3,048	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-	1,361 to 2,501	-	2,001 to 3,141	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-	1,602 to 2,097	-	2,672 to 3,167	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-	1,369 to 2,227	-	2,439 to 3,297	-
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-	1,485 to 1,946	-	1,865 to 2,326	-
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-	1,257 to 2,052	-	1,637 to 2,432	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-	1,621 to 2,128	-	1,786 to 2,293	-
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-	1,331 to 2,235	-	1,496 to 2,400	-
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-	1,677 to 2,224	-	1,912 to 2,459	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-	1,351 to 2,329	-	1,586 to 2,564	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-	1,520 to 2,342	-	1,685 to 2,507	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-	1,326 to 1,749	-	1,491 to 1,914	-
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-	1,748 to 2,584	-	2,108 to 2,944	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-	1,417 to 2,360	-	1,777 to 2,720	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-	2,208 to 3,935	-	2,478 to 4,205	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-	2,071 to 3,146	-	2,341 to 3,416	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-	149 to 521	-	1,424 to 1,796	1 (5-6PM)
CT 24	SR 160 (Freeport Blvd/ River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-	94 to 180	-	1,369 to 1,455	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-	41 to 125	-	1,316 to 1,400	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-	119 to 192	-	2,104 to 2,177	13 (6AM-7PM)
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-	74 to 130	-	2,059 to 2,115	13 (6AM-7PM)
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-	79 to 157	-	2,064 to 2,142	13 (6AM-7PM)
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-	92 to 152	-	2,592 to 2,652	13 (6AM-7PM)
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-	173 to 465	-	2,823 to 3,115	13 (6AM-7PM)
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-	193 to 378	-	2,843 to 3,028	13 (6AM-7PM)
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-	559 to 942	-	3,509 to 3,892	13 (6AM-7PM)
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-	43 to 181	-	568 to 706	13 (6AM-7PM)
CT 34	SR 84 (Courtland Rd/ Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-	11 to 27	-	76 to 92	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-	3,633 to 8,253	-	5,108 to 9,728	5 (2-7PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)	6,786 to 10,493	3 (6-9AM)	8,261 to 11,968	12 (6AM-PM)
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-	634 to 2,216	-	2,109 to 3,691	7 (12-7PM)
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-	995 to 1,950	-	2,470 to 3,425	3 (6-9AM)
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-	2,864 to 4,249	-	5,814 to 7,199	13 (6AM-7PM)
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-	1,928 to 2,824	-	4,878 to 5,774	9 (7-8AM; 11-7PM)
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9-1PM; 2-6PM)	752 to 1,290	12 (6AM-6PM)	3,702 to 4,240	13 (6AM-7PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM-7PM)	1,288 to 1,853	13 (6AM-7PM)	4,238 to 4,803	13 (6AM-7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM-7PM)	1,362 to 2,022	13 (6AM-7PM)	4,312 to 4,972	13 (6AM-7PM)
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ SJ Co. Line	C	790	704 to 1,030	12 (6AM-6PM)	788 to 1,154	12 (6AM-6PM)	968 to 1,334	13 (6AM-7PM)
CT 45	SR 12	Sacramento Co./ SJ Co. Line	I-5	C	790	773 to 1,164	12 (6AM-6PM)	813 to 1,224	13 (6AM-7PM)	993 to 1,404	13 (6AM-7PM)
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5PM)	2,851 to 5,266	5 (7-8AM; 2-6PM)	3,261 to 5,676	6 (7-9AM; 2-6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-	3,351 to 4,578	2 (4-6PM)	3,761 to 4,988	4 (7-8AM; 3-6PM)
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-	569 to 1,341	-	1,389 to 2,161	5 (12-1PM; 2-6PM)
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-	195 to 329	-	1,015 to 1,149	13 (6AM-7PM)
CT 50	SR 4 (Marsh Creek Rd) ²	Vasco Rd	Byron Hwy (Old SR 4)	D	1,600	442 to 733	-	-	-	-	-
				C	790	-	-	495 to 821	2 (4-6PM)	1,915 to 2,241	13 (6AM-7PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-	614 to 1,357	-	2,034 to 2,777	13 (6AM-7PM)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-	412 to 746	-	1,832 to 2,166	13 (6AM-7PM)
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)	867 to 1,492	1 (4-5PM)	2,287 to 2,912	13 (6AM-7PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-	2,941 to 5,549	-	3,651 to 6,259	-
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-	5,268 to 6,846	-	5,978 to 7,556	3 (7-8AM; 4-6PM)
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-	2,867 to 5,411	1 (3-4PM)	3,577 to 6,121	4 (2-6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)	5,113 to 6,645	9 (6-9AM; 12-6PM)	5,823 to 7,355	13 (6AM-7PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)	1, 517 to 5,699	4 (3-7PM)	1,777 to 5,959	5 (2-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)	2,111 to 5,486	3 (6-9AM)	2,371 to 5,746	3 (6-9AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)	1,631 to 5,778	5 (2-7PM)	1,891 to 6,038	5 (2-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-	2,138 to 4,693	1 (6-7AM)	2,398 to 4,953	2 (6-8AM)
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-	1,739 to 4,788	-	2,189 to 5,238	-
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-	2,111 to 3,510	-	2,561 to 3,960	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-	1,723 to 4,767	-	2,173 to 5,217	-
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-	2,375 to 3,928	-	2,825 to 4,378	-
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-	17 to 75	-	82 to 140	-
OAK 01	Main Street (Old SR 4) ¹	SR 160	Cypress Rd	C	1,920	752 to 1,663	-	-	-	-	
				D	3,540	-	-	817 to 1,807	-	1,487 to 2,477	-
OAK 02	Main Street (Old SR 4) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)	-	-	-	-
				D	1,760	-	-	852 to 1,575	-	1,522 to 2,245	11 (7-9AM; 11AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	D	1,600	304 to 764	-	340 to 856	-	405 to 921	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-	157 to 411	-	222 to 476	-
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	D	1,410	155 to 334	-	157 to 337	-	222 to 402	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-	789 to 2,191	-	2,064 to 3,466	-
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-	170 to 551	-	1,445 to 1,826	2 (3-4PM; 5-6PM)
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-	109 to 384	-	174 to 449	-
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137	-	81 to 145	-	2,066 to 2,130	13 (6AM-7PM)
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-	11 to 32	-	471 to 492	-
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-	20 to 39	-	480 to 499	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-	41 to 72	-	501 to 532	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-	134 to 255	-	284 to 405	-
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-	152 to 344	-	612 to 804	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-	57 to 127	-	582 to 652	-
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-	86 to 136	-	151 to 201	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-	230 to 377	-	380 to 527	-

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	D	1,410	175 to 332	-	182 to 345	-	402 to 565	-
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-	61 to 283	-	126 to 348	-
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-	18 to 35	-	83 to 100	-
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-	14 to 39	-	79 to 104	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-	4 to 59	-	69 to 124	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-	18 to 58	-	83 to 123	-
SJ 01	Walnut Grove Rd	Sacramento Co./ SJ Co. Line	I-5	C	790	141 to 232	-	146 to 241	-	831 to 926	13 (6AM-7PM)
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-	8 to 23	-	478 to 493	-
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-	108 to 209	-	1,003 to 1,104	13 (6AM-7PM)
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-	77 to 192	-	972 to 1,087	13 (6AM-7PM)
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	D	1,600	521 to 824	-	584 to 923	-	1,109 to 1,448	-
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-	213 to 334	-	738 to 859	-
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	D	3,540	418 to 769	-	493 to 907	-	1,018 to 1,432	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-	346 to 861	-	886 to 1,401	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-	346 to 850	-	1,241 to 1,745	-
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-	1,257 to 2,555	-	1,782 to 3,080	-
WS 02	Industrial Blvd/ Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-	866 to 2,081	1 (5–6PM)	1,391 to 2,606	5 (7–9AM; 4–7PM)
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	C	1,920	546 to 1,718	-	606 to 1,906	-	1,131 to 2,431	3 (7–9AM; 3–7PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	C	680	42 to 146	-	46 to 160	-	571 to 685	1 (8–9AM)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-	76 to 257	-	141 to 322	-
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-	28 to 71	-	553 to 596	-
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-	31 to 86	-	556 to 611	-

Notes:

(4) Facility is analyzed as a Caltrans facility under Baseline Conditions and a local facility under Baseline Plus Construction Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009). LOS Threshold is LOS C under Baseline Conditions and changes to LOS D under Baseline Plus Construction Conditions.

(5) Facility is analyzed as a local facility under Baseline Conditions and a Caltrans facility under Baseline Plus Construction Conditions – roadway is adopted as a State facility after Baseline Year (2009). LOS Threshold is LOS D under Baseline Conditions and changes to LOS C under Baseline Plus Construction Conditions.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 12: EAST CANAL (ALTERNATIVES 1B, 2B, AND 6B) PROJECT ROADWAY PAVEMENT IMPACTS

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line	Acceptable	Yes	No
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	Yes	No
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Acceptable	Yes	No
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	Acceptable	Yes	No
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	No	No
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	No	No
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Yes	Yes
CC 04	Byron Hwy	Delta Rd	Old SR 4	Acceptable	No	No
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	Deficient	Yes	Yes
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	No	No
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	Yes	No
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	Yes	Yes
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	Yes	No
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	Yes	No
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	Yes	No
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Yes	Yes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	Yes	No
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	Yes	Yes
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	Yes	No
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	Yes	Yes
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	Yes	Yes
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	Yes	Yes
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	Yes	Yes
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	Yes	Yes
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	Yes	No
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	Yes	No
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	Yes	Yes
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Yes	Yes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Yes	Yes
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	No	No
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	Yes	No
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	Yes	No
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	Yes	No
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	Yes	No
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	Acceptable	Yes	No
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	Acceptable	Yes	No
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	Deficient	Yes	Yes
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Yes	Yes
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	Yes	No
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Deficient	Yes	Yes
CT 45	SR 12	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Yes	Yes
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Yes	Yes
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	Yes	No
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	Yes	No
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Yes	Yes
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Acceptable	Yes	No
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Yes	Yes
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Yes	Yes
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	Deficient	No	No
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Deficient	Yes	Yes
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	Yes	Yes
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	Acceptable	No	No
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	No	No
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	Deficient	No	No
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	Yes	Yes
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	Yes	No
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	No	No
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	Yes	No
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	Yes	Yes
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	Yes	Yes
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	Yes	No
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	Yes	Yes
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	Deficient	Yes	Yes
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	Yes	Yes
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Yes	Yes
SC 11	Walnut Grove Rd/ River Rd	Walnut Grove Bridge	Sacramento Co./ San Joaquin Co. Line	Acceptable	Yes	No
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	No	No
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	No	No
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	No	No
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	No	No
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	No	No
SJ 01	Walnut Grove Rd	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Yes	Yes
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	Yes	Yes
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	Yes	No
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	Yes	No
SJ 05	Byron Hwy	Alameda Co./ San Joaquin Co. Line	Mountain House Pkwy	Acceptable	Yes	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	Acceptable	Yes	No
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	Acceptable	Yes	No
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	Yes	Yes
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	Yes	Yes
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	Yes	No
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	Yes	No
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Yes	Yes
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Yes	Yes
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	Yes	Yes
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Deficient	Yes	Yes
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Yes	Yes

1

2

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

West Canal (Alternatives 1C, 2C, and 6C)

The west canal alternatives would divert water from the north Delta via intakes and pipelines on the west bank of the Sacramento River to a canal. The canal would carry water south along the western side of the Delta to an intermediate pumping plant, which will pump the water through a tunnel to a canal leading to a new forebay. Construction activity under this alternative alignment includes constructing intakes and pumping plants in the north Delta region, canals and a tunnel to convey the water south, siphons and bridges at other waterways and roadways, and a forebay and control structures in the south Delta area.

Table 13 summarizes the Baseline, BPBG, and BPBGPP LOS for the study roadway segments under the west canal alternatives. Table 13 also identifies the number of occurrences and the respective time frame when roadway segments exceed the hourly volume LOS threshold for each scenario. The results presented in Table 13 indicate that 20 roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM period under BPBG conditions and 56 roadway segments exceed the LOS threshold for at least one hour under BPBGPP conditions for the west canal alternatives.

Table 14 summarizes the baseline plus project pavement impacts for the study roadway segments. The results presented in Table 14 indicate that construction activity related to the west canal alternatives would result in a potential impact to the physical conditions on 44 of the study roadway segments.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 13: WEST CANAL (ALTERNATIVES 1C, 2C, AND 6C) PROJECT ROADWAY TRAFFIC OPERATIONS

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./ Alameda Co. Line	Alameda Co./San Joaquin Co. Line	D	1,600	385 to 656	-	431 to 735	-	1,356 to 1,660	3 (7-8AM; 4-6PM)
BRE 01	Brentwood Blvd (old SR 4) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)	-	-	-	-
				D	1,760	-	-	592 to 1,531	-	1,517 to 2,456	12 (7AM-7PM)
BRE 02	Brentwood Blvd (old SR 4) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-	-	-	-	-
				D	3,540	-	-	371 to 1,019	-	1,296 to 1,944	-
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	D	3,540	437 to 1,300	-	489 to 1,456	-	774 to 1,711	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-	139 to 370	-	269 to 500	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-	101 to 333	-	356 to 588	-
CC 03	Old SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)	-	-	-	-
				D	1,600	-	-	1,245 to 1,848	3 (3-6PM)	2,170 to 2,773	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4	D	1,410	108 to 240	-	109 to 241	-	649 to 781	-
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-	541 to 1,016	-	1,466 to 1,941	7 (6-9AM; 3-7PM)
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-	2,914 to 6,552	1 (7-8AM)	3,824 to 7,462	2 (7-9AM)
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-	1,830 to 6,338	2 (4-6PM)	2,740 to 7,248	2 (4-6PM)
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-	2,557 to 5,588	-	2,837 to 5,868	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-	1,682 to 5,716	-	1,962 to 5,996	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-	1,999 to 3,667	-	2,054 to 3,722	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-	1,375 to 3,653	-	1,430 to 3,708	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-	1,675 to 2,408	-	1,730 to 2,463	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-	1,361 to 2,501	-	1,416 to 2,556	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-	1,602 to 2,097	-	1,667 to 2,162	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-	1,369 to 2,227	-	1,434 to 2,292	-
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-	1,485 to 1,946	-	2,110 to 2,571	-
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-	1,257 to 2,052	-	1,882 to 2,677	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-	1,621 to 2,128	-	2,381 to 2,888	1 (4-5PM)
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-	1,331 to 2,235	-	2,091 to 2,995	2 (3-5PM)
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-	1,677 to 2,224	-	1,732 to 2,279	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-	1,351 to 2,329	-	1,406 to 2,384	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-	1,520 to 2,342	-	1,830 to 2,652	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-	1,326 to 1,749	-	1,636 to 2,059	-
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-	1,748 to 2,584	-	1,878 to 2,714	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-	1,417 to 2,360	-	1,547 to 2,490	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-	2,208 to 3,935	-	2,263 to 3,990	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-	2,071 to 3,146	-	2,126 to 3,201	-
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-	149 to 521	-	1,959 to 2,331	13 (6AM-7PM)
CT 24	SR 160 (Freeport Blvd/ River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-	94 to 180	-	149 to 235	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-	41 to 125	-	96 to 180	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-	119 to 192	-	174 to 247	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-	74 to 130	-	129 to 185	-
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-	79 to 157	-	1,329 to 1,407	-
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-	92 to 152	-	2,827 to 2,887	13 (6AM-7PM)
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-	173 to 465	-	2,908 to 3,200	13 (6AM-7PM)
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-	193 to 378	-	2,928 to 3,113	13 (6AM-7PM)
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-	559 to 942	-	3,294 to 3,677	13 (6AM-7PM)
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-	43 to 181	-	1,668 to 1,806	13 (6AM-7PM)
CT 34	SR 84 (Courtland Rd/ Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-	11 to 27	-	211 to 227	-
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-	3,633 to 8,253	-	5,003 to 9,623	4 (2-6PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)	6,786 to 10,493	2 (6-8AM)	8,156 to 11,863	12 (6AM-6PM)
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-	634 to 2,216	-	2,004 to 3,586	5 (2-7PM)
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-	995 to 1,950	-	2,365 to 3,320	3 (6-9AM)
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-	2,864 to 4,249	-	5,599 to 6,984	13 (6AM-7PM)
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-	1,928 to 2,824	-	4,663 to 5,559	3 (3-6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9-1PM; 2-6PM)	752 to 1,290	12 (6AM-6PM)	3,487 to 4,025	13 (6AM-7PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM-7PM)	1,288 to 1,853	13 (6AM-7PM)	4,023 to 4,588	13 (6AM-7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM-7PM)	1,362 to 2,022	13 (6AM-7PM)	4,097 to 4,757	13 (6AM-7PM)
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ SJ Co. Line	C	790	704 to 1,030	12 (6AM-6PM)	788 to 1,154	12 (6AM-6PM)	1,538 to 1,904	13 (6AM-7PM)
CT 45	SR 12	Sacramento Co./ SJ Co. Line	I-5	C	790	773 to 1,164	12 (6AM-6PM)	813 to 1,224	13 (6AM-7PM)	1,563 to 1,974	13 (6AM-7PM)
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5PM)	2,851 to 5,266	5 (7-8AM; 2-6PM)	3,316 to 5,731	6 (7-9AM; 2-6PM)
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-	3,351 to 4,578	2 (4-6PM)	3,816 to 5,043	5 (6-8AM; 3-6PM)
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-	569 to 1,341	-	1,494 to 2,266	8 (8-9AM; 12-7PM)
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-	195 to 329	-	1,120 to 1,254	13 (6AM-7PM)
CT 50	SR 4 (Marsh Creek Rd) ²	Vasco Rd	Byron Hwy (Old SR 4)	D	1,600	442 to 733	-	-	-	-	-
				C	790	-	-	495 to 821	2 (4-6PM)	1,420 to 1,746	13 (6AM-7PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-	614 to 1,357	-	1,539 to 2,282	12 (7AM-7PM)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-	412 to 746	-	1,337 to 1,671	13 (6AM-7PM)
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)	867 to 1,492	1 (4-5PM)	1,792 to 2,417	13 (6AM-7PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-	2,941 to 5,549	-	3,406 to 6,014	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-	5,268 to 6,846	-	5,733 to 7,311	2 (7-8AM; 5-6PM)
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-	2,867 to 5,411	1 (3-4PM)	3,332 to 5,876	3 (3-6PM)
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)	5,113 to 6,645	9 (6-9AM; 12-6PM)	5,578 to 7,110	13 (6AM-7PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)	1,517 to 5,699	4 (3-7PM)	1,982 to 6,164	5 (2-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)	2,111 to 5,486	3 (6-9AM)	2,576 to 5,951	3 (6-9AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)	1,631 to 5,778	5 (2-7PM)	2,096 to 6,243	5 (2-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-	2,138 to 4,693	1 (6-7AM)	2,603 to 5,158	2 (6-8AM)
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-	1,739 to 4,788	-	1,794 to 4,843	-
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-	2,111 to 3,510	-	2,166 to 3,565	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-	1,723 to 4,767	-	1,778 to 4,822	-
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-	2,375 to 3,928	-	2,430 to 3,983	-
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-	17 to 75	-	72 to 130	-
OAK 01	Main Street (Old SR 4) ¹	SR 160	Cypress Rd	C	1,920	752 to 1,663	-	-	-	-	-
				D	3,540	-	-	817 to 1,807	-	1,742 to 2,732	-
OAK 02	Main Street (Old SR 4) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)	-	-	-	-
				D	1,760	-	-	852 to 1,575	-	1,777 to 2,500	13 (6AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

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						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	D	1,600	304 to 764	-	340 to 856	-	830 to 1,346	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-	157 to 411	-	287 to 541	-
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	D	1,410	155 to 334	-	157 to 337	-	697 to 877	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-	789 to 2,191	-	2,599 to 4,001	6 (8-9AM; 2-7PM)
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-	170 to 551	-	1,980 to 2,361	13 (6AM-7PM)
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-	109 to 384	-	1,919 to 2,194	13 (6AM-7PM)
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137	-	81 to 145	-	136 to 200	-
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-	11 to 32	-	66 to 87	-
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-	20 to 39	-	75 to 94	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-	41 to 72	-	96 to 127	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-	134 to 255	-	1,384 to 1,505	13 (6AM-9AM; 11AM-12PM; 2-6PM)
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-	152 to 344	-	207 to 399	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-	57 to 127	-	2,792 to 2,862	13 (6AM-7PM)
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-	86 to 136	-	1,336 to 1,386	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-	230 to 377	-	360 to 507	-
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	D	1,410	175 to 332	-	182 to 345	-	1,702 to 2,865	13 (6AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

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						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-	61 to 283	-	116 to 338	-
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-	18 to 35	-	73 to 90	-
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-	14 to 39	-	69 to 94	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-	4 to 59	-	59 to 114	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-	18 to 58	-	73 to 113	-
SJ 01	Walnut Grove Rd	Sacramento Co./ SJ Co. Line	I-5	C	790	141 to 232	-	146 to 241	-	1,666 to 1,761	13 (6AM-7PM)
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-	8 to 23	-	63 to 78	-
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-	108 to 209	-	163 to 264	-
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-	77 to 192	-	132 to 247	-
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	D	1,600	521 to 824	-	584 to 923	-	1,509 to 1,848	13 (6-9AM; 2-7PM)
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-	213 to 334	-	1,138 to 1,259	-
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	D	3,540	418 to 769	-	493 to 907	-	1,418 to 1,832	-
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-	346 to 861	-	401 to 916	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-	346 to 850	-	401 to 905	-
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-	1,257 to 2,555	-	2,882 to 4,180	6 (7-9AM; 3-7PM)
WS 02	Industrial Blvd/ Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-	866 to 2,081	1 (5-6PM)	2,491 to 3,706	13 (6AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

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						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	C	1,920	546 to 1,718	-	606 to 1,906	-	2,231 to 3,531	13 (6AM-7PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	C	680	42 to 146	-	46 to 160	-	1,671 to 1,785	13 (6AM-7PM)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-	76 to 257	-	1,886 to 2,067	13 (6AM-7PM)
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-	28 to 71	-	2,763 to 2,806	13 (6AM-7PM)
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-	31 to 86	-	1,656 to 1,711	13 (6AM-7PM)

Notes:

- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions and a local facility under Baseline Plus Construction Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009). LOS Threshold is LOS C under Baseline Conditions and changes to LOS D under Baseline Plus Construction Conditions.
- (2) Facility is analyzed as a local facility under Baseline Conditions and a Caltrans facility under Baseline Plus Construction Conditions – roadway is adopted as a State facility after Baseline Year (2009). LOS Threshold is LOS D under Baseline Conditions and changes to LOS C under Baseline Plus Construction Conditions.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 14: WEST CANAL (ALTERNATIVES 1C, 2C, AND 6C) PROJECT ROADWAY PAVEMENT IMPACTS

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line	Acceptable	Yes	No
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	Yes	No
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Acceptable	Yes	No
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	Acceptable	Yes	No
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	Yes	Yes
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	Yes	Yes
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Yes	Yes
CC 04	Byron Hwy	Delta Rd	Old SR 4	Acceptable	Yes	No
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	Deficient	Yes	Yes
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	No	No
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	Yes	Yes
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	Yes	No
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	No	No
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	Yes	No
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	Yes	No
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Yes	Yes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	Yes	No
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	No	No
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	No	No
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	Yes	Yes
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	No	No
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	No	No
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	No	No
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	No	No
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	Yes	No
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	Yes	No
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	Yes	Yes
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Yes	Yes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Yes	Yes
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	Yes	Yes
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	Yes	No
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	Yes	No
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	Yes	No
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	Yes	No
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	Acceptable	Yes	No
CT 40	SR 12	Sunset Ave/Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy	Acceptable	Yes	No
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	Deficient	Yes	Yes
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Yes	Yes
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	Yes	No
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Deficient	Yes	Yes
CT 45	SR 12	Sacramento Co./San Joaquin Co. Line	I-5	Deficient	Yes	Yes
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Yes	Yes
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	Yes	No
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	Yes	No
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Yes	Yes
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Acceptable	Yes	No
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Yes	Yes
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Yes	Yes
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	No	No
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	No	No
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	No	No
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	Deficient	No	No
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Deficient	Yes	Yes
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	Yes	Yes
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	Acceptable	Yes	No
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	Yes	Yes
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	Deficient	Yes	Yes
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	Yes	Yes
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	Yes	No
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	Yes	No
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	No	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	No	No
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	No	No
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	No	No
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	Yes	No
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	No	No
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	Deficient	Yes	Yes
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	Yes	Yes
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Yes	Yes
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ San Joaquin Co. Line	Acceptable	Yes	No
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	No	No
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	No	No
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	No	No
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	No	No
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	No	No
SJ 01	Walnut Grove Rd	Sacramento Co./ San Joaquin Co. Line	I-5	Deficient	Yes	Yes
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	No	No
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	No	No
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	No	No
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	Acceptable	Yes	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	Acceptable	Yes	No
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	Acceptable	Yes	No
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	No	No
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	No	No
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	Yes	No
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	Yes	No
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Yes	Yes
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Yes	Yes
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	Yes	Yes
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Deficient	Yes	Yes
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Through Delta/Separate Corridors (Alternative 9)

The through delta/separate corridors alignment would consist of four corridors: two for water supply and two for fish movement. Water would travel south from proposed intakes near Walnut Grove through a series of rivers and canals guided by operable barriers. Construction activity under this alignment includes constructing the intakes near Walnut Grove, operable barriers throughout the Delta, and dredging of existing canals and waterways to convey additional water.

Table 15 summarizes the Baseline, BPBG, and BPBGPP LOS for the study roadway segments under the through delta/separate corridors alignment. Table 15 also identifies the number of occurrences and the respective time frame when roadway segments exceed the hourly volume LOS threshold for each scenario. The results presented in Table 15 indicate that 23 roadway segments exceed the LOS threshold for at least one hour during the 6 AM to 7 PM period under BPBG conditions and 56 roadway segments exceed the LOS threshold for at least one hour under BPBGPP conditions for the through delta/separate corridors alignment.

Table 16 summarizes the baseline plus project pavement impacts for the study roadway segments. The results presented in Table 16 indicate that construction activity related to the through delta/separate corridors alignment would result in a potential impact to the physical conditions on 42 of the study roadway segments.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 15: SEPARATE CORRIDORS (ALTERNATIVE 9) PROJECT ROADWAY TRAFFIC OPERATIONS

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
ALA 01	Byron Hwy	Contra Costa Co./ Alameda Co. Line	Alameda Co./San Joaquin Co. Line	D	1,600	385 to 656	-	470 to 800	-	2,160 to 2,490	13 (6AM-7PM)
BRE 01	Brentwood Blvd (old SR 4) ¹	Delta Rd (Oakley City Limits)	Balfour Rd	C	970	586 to 1,516	11 (7-9AM; 10AM-7PM)	-	-	-	-
				D	1,760	-	-	597 to 1,544	-	3,302 to 4,249	13 (6AM-7PM)
BRE 02	Brentwood Blvd (old SR 4) ¹	Balfour Rd	Brentwood City Limits (South)	C	1,920	369 to 1,013	-	-	-	-	-
				D	3,540	-	-	373 to 1,024	-	3,078 to 3,729	5 (10-11AM; 12-4PM)
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	D	3,540	437 to 1,300	-	533 to 1,586	-	608 to 1,661	-
CC 01	Bethel Island Rd	Oakley City Limits	End	D	1,600	124 to 330	-	151 to 403	-	226 to 478	-
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	D	1,600	90 to 297	-	110 to 362	-	185 to 437	-
CC 03	Old SR 4 ¹	Brentwood City Limits (South)	Marsh Creek Rd	C	790	1,133 to 1,682	13 (6AM-7PM)	-	-	-	-
				D	1,600	-	-	1,307 to 1,940	4 (7-8AM; 3-6PM)	4,012 to 4,645	13 (6AM-7PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4	D	1,410	108 to 240	-	109 to 243	-	184 to 318	-
CC 05	Byron Hwy	SR 4	Contra Costa Co./ Alameda Co. Line	D	1,600	483 to 907	-	589 to 1,107	-	2,279 to 2,797	13 (6AM-7PM)
CT 01	I-5 NB	Florin Rd	Pocket Rd	F	6,060	2,589 to 5,820	-	3,095 to 6,958	1 (7-8AM)	3,170 to 7,033	1 (7-8AM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 02	I-5 SB	Florin Rd	Pocket Rd	F	6,060	1,647 to 5,705	-	1,931 to 6,690	2 (4-6PM)	2,006 to 6,765	2 (4-6PM)
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	F	6,060	2,359 to 5,156	-	2,666 to 5,828	-	2,741 to 5,903	-
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	F	6,060	1,543 to 5,243	-	1,759 to 5,978	-	1,834 to 6,053	-
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,820 to 3,339	-	2,098 to 3,848	-	2,173 to 3,923	-
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	F	4,010	1,254 to 3,332	-	1,442 to 3,832	-	1,517 to 3,907	-
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,504 to 2,162	-	1,770 to 2,544	-	1,845 to 2,619	-
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	F	4,010	1,217 to 2,236	-	1,442 to 2,648	-	1,517 to 2,723	-
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,414 to 1,851	-	1,707 to 2,234	-	2,112 to 2,639	-
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	F	4,010	1,207 to 1,964	-	1,458 to 2,373	-	1,863 to 2,778	-
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,312 to 1,720	-	1,580 to 2,072	-	1,655 to 2,147	-
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	C	2,880	1,111 to 1,813	-	1,339 to 2,184	-	1,414 to 2,259	-
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	C	2,880	1,374 to 1,803	-	1,759 to 2,308	-	2,119 to 2,668	-
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	C	2,880	1,128 to 1,894	-	1,444 to 2,424	-	1,804 to 2,784	-
CT 15	I-5 NB	Peltier Rd	Turner Rd	C	2,880	1,421 to 1,885	-	1,819 to 2,413	-	1,894 to 2,488	-
CT 16	I-5 SB	Peltier Rd	Turner Rd	C	2,880	1,145 to 1,974	-	1,466 to 2,527	-	1,541 to 2,602	-
CT 17	I-5 NB	Turner Rd	SR 12	C	2,880	1,288 to 1,985	-	1,649 to 2,541	-	1,759 to 2,651	-
CT 18	I-5 SB	Turner Rd	SR 12	C	2,880	1,124 to 1,482	-	1,439 to 1,897	-	1,549 to 2,007	-
CT 19	I-5 NB	SR 12	Eight Mile Rd	C	4,400	1,533 to 2,267	-	1,901 to 2,811	-	2,011 to 2,921	-
CT 20	I-5 SB	SR 12	Eight Mile Rd	C	4,400	1,243 to 2,070	-	1,541 to 2,567	-	1,651 to 2,677	-
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	D	5,410	1,937 to 3,452	-	2,402 to 4,280	-	2,477 to 4,355	-
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	D	5,410	1,817 to 2,760	-	2,253 to 3,422	-	2,328 to 3,497	-
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	E	1,740	136 to 476	-	160 to 559	-	235 to 634	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 24	SR 160 (Freeport Blvd/ River Rd)	Freeport Bridge	Scribner Rd	E	1,740	94 to 180	-	94 to 180	-	169 to 255	-
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	E	1,740	41 to 125	-	41 to 125	-	116 to 200	-
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	E	1,740	105 to 170	-	126 to 204	-	201 to 279	-
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	E	1,740	69 to 122	-	78 to 137	-	153 to 212	-
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	E	1,740	75 to 150	-	82 to 164	-	797 to 879	-
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	E	1,740	78 to 128	-	99 to 163	-	2,494 to 2,558	13 (6AM-7PM)
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	E	1,740	173 to 465	-	173 to 465	-	2,568 to 2,860	13 (6AM-7PM)
CT 31	SR 160	A St (Isleton)	SR 12	E	1,740	193 to 378	-	193 to 378	-	2,588 to 2,773	13 (6AM-7PM)
CT 32	SR 160	SR 12	Brannan Island Rd	F	1,740	530 to 894	-	583 to 983	-	3,993 to 4,393	13 (6AM-7PM)
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	B	200	40 to 169	-	45 to 192	-	2,440 to 2,587	13 (6AM-7PM)
CT 34	SR 84 (Courtland Rd/ Ryer Ave)	Courtland Rd	Cache Slough Ferry	C	680	10 to 25	-	11 to 28	-	86 to 103	-
CT 35	I-80 EB	Suisun Valley Rd	SR 12	C	8,350	3,079 to 6,994	-	3,941 to 8,952	3 (3-6PM)	5,646 to 10,657	8 (11AM-7PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	C	8,350	5,751 to 8,892	2 (6-8AM)	7,361 to 11,382	7 (6-9AM; 2-6PM)	9,066 to 13,087	13 (6AM-7PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 37	SR 12 EB	I-80	Beck Ave	C	2,880	528 to 1,847	-	686 to 2,401	-	2,391 to 4,106	12 (7AM-7PM)
CT 38	SR 12 WB	I-80	Beck Ave	C	2,880	829 to 1,625	-	1,078 to 2,113	-	2,783 to 3,818	12 (6AM-6PM)
CT 39	SR 12	Beck Ave	Sunset Ave/ Grizzly Island Rd	C	5,060	2,408 to 3,573	-	3,091 to 4,587	-	6,501 to 7,977	13 (6AM-7PM)
CT 40	SR 12	Sunset Ave/ Grizzly Island Rd	Walters Rd/ Lawler Ranch Pkwy	C	5,060	1,607 to 2,353	-	2,089 to 3,059	-	5,499 to 6,469	13 (6AM-7PM)
CT 41	SR 12	Walters Rd/ Lawler Ranch Pkwy	SR 113	C	790	627 to 1,075	10 (6-8AM; 9-1PM; 2-6PM)	815 to 1,398	13 (6AM-7PM)	4,225 to 4,808	13 (6AM-7PM)
CT 42	SR 12	SR 113	SR 84 (River Rd)	C	790	1,073 to 1,544	13 (6AM-7PM)	1,395 to 2,007	13 (6AM-7PM)	4,805 to 5,417	13 (6AM-7PM)
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	C	970	1,135 to 1,685	13 (6AM-7PM)	1,476 to 2,191	13 (6AM-7PM)	4,886 to 5,601	13 (6AM-7PM)
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./ SJ Co. Line	C	790	704 to 1,030	12 (6AM-6PM)	859 to 1,257	12 (6AM-7PM)	1,074 to 1,472	13 (6AM-7PM)
CT 45	SR 12	Sacramento Co./ SJ Co. Line	I-5	C	790	773 to 1,164	12 (6AM-6PM)	846 to 1,274	13 (6AM-7PM)	1,061 to 1,489	13 (6AM-7PM)
CT 46	I-80 EB	SR 113	Pedrick Rd	C	4,400	2,508 to 4,632	2 (3-5PM)	3,066 to 5,662	6 (7-9AM; 2-6PM)	4,771 to 7,367	13 (6AM-7PM)
CT 47	I-80 WB	SR 113	Pedrick Rd	C	4,400	3,068 to 4,191	-	3,528 to 4,819	4 (7-8AM; 3-6PM)	5,233 to 6,524	13 (6AM-7PM)
CT 48	SR 113	I-80	Dixon City Limits	C	1,920	569 to 1,341	-	569 to 1,341	-	3,979 to 4,751	13 (6AM-7PM)
CT 49	SR 113	Dixon City Limits	SR 12	C	680	174 to 294	-	212 to 359	-	3,622 to 3,769	13 (6AM-7PM)
CT 50	SR 4 (Marsh	Vasco Rd	Byron Hwy	D	1,600	442 to 733	-	-	-	-	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment Creek Rd) ²	From	To (Old SR 4)	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
				C	790	-	-	539 to 894	2 (4-6PM)	3,244 to 3,599	13 (6AM-7PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	D	1,600	554 to 1,224	-	647 to 1,430	-	3,352 to 4,135	13 (6AM-7PM)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	C	790	412 to 746	-	412 to 746	-	3,117 to 3,451	13 (6AM-7PM)
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	D	1,410	867 to 1,492	1 (4-5PM)	867 to 1,492	1 (4-5PM)	3,572 to 4,197	13 (6AM-7PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	2,552 to 4,815	-	3,158 to 5,957	-	4,513 to 7,312	1 (3-4PM)
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	D	7,280	4,550 to 5,913	-	5,667 to 7,364	2 (7-8AM; 5-6PM)	7,022 to 8,719	11 (6-9AM; 10AM-6PM)
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	D	5,410	2,430 to 4,586	-	3,110 to 5,870	3 (3-6PM)	4,465 to 7,225	12 (7AM-7PM)
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	D	5,410	4,333 to 5,631	3 (7-8AM; 4-6PM)	5,546 to 7,208	13 (6AM-7PM)	6,901 to 8,563	13 (6AM-7PM)
CT 58	I-205 EB	I-580	Mountain House Pkwy	C	4,400	1,350 to 5,071	4 (3-7PM)	1,610 to 6,048	5 (2-7PM)	2,455 to 6,893	5 (2-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	C	4,400	1,873 to 4,867	2 (6-8AM)	2,243 to 5,829	3 (6-9AM)	3,088 to 6,674	4 (6-10AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	C	4,400	1,431 to 5,068	4 (3-7PM)	1,774 to 6,284	5 (2-7PM)	2,619 to 7,129	7 (12-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	C	4,400	1,875 to 4,117	-	2,325 to 5,105	2 (6-8AM)	3,170 to 5,950	5 (6-11AM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	D	5,410	1,525 to 4,200	-	1,891 to 5,208	-	2,546 to 5,863	3 (3-6PM)
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	D	5,410	1,852 to 3,079	-	2,296 to 3,818	-	2,951 to 4,473	-
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	D	5,410	1,511 to 4,182	-	1,874 to 5,186	-	2,529 to 5,841	3 (3-6PM)
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	D	5,410	2,083 to 3,446	-	2,583 to 4,273	-	3,238 to 4,928	-
ISL 01	A St/4th St/ Jackson Blvd.	SR 160	Isleton City Limits	D	1,410	17 to 75	-	17 to 75	-	92 to 150	-
OAK 01	Main Street (Old SR 4) ¹	SR 160	Cypress Rd	C	1,920	752 to 1,663	-	-	-	-	-
				D	3,540	-	-	872 to 1,927	-	3,577 to 4,632	13 (6AM-7PM)
OAK 02	Main Street (Old SR 4) ¹	Cypress Rd	Delta Rd (Oakley City Limits)	C	970	722 to 1,335	10 (7-9AM; 11AM-7PM)	-	-	-	-
				D	1,760	-	-	924 to 1,709	-	3,629 to 4,414	13 (6AM-7PM)
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	D	1,600	304 to 764	-	371 to 932	-	446 to 1,007	-
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	D	1,410	140 to 367	-	171 to 448	-	246 to 523	-
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	D	1,410	155 to 334	-	157 to 339	-	232 to 414	-
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	D	3,540	789 to 2,191	-	789 to 2,191	-	864 to 2,266	-
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	D	1,760	152 to 492	-	185 to 600	-	260 to 675	-
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	D	1,410	98 to 346	-	118 to 415	-	193 to 490	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	D	1,410	77 to 137		85 to 151	-	160 to 226	-
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	D	1,410	10 to 29	-	12 to 34	-	87 to 109	-
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	D	1,410	19 to 38	-	20 to 40	-	95 to 115	-
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	D	1,410	41 to 71	-	42 to 72	-	117 to 147	-
SC 06	Twin Cities Rd	River Rd	I-5	D	1,410	130 to 248	-	137 to 262	-	852 to 977	-
SC 07	Twin Cities Rd	I-5	Franklin Blvd	D	1,410	141 to 318	-	162 to 365	-	262 to 465	-
SC 08	Sutter Slough Bridge Rd	Sacramento Co./ Yolo Co. Line	Paintersville Bridge	D	1,410	51 to 113	-	62 to 138	-	2,457 to 2,533	13 (6AM-7PM)
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	D	1,410	85 to 134	-	87 to 137	-	802 to 852	-
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	D	1,600	223 to 365	-	236 to 386	-	951 to 1,101	-
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./ SJ Co. Line	D	1,410	175 to 332	-	187 to 355	-	902 to 1,070	-
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	D	1,410	61 to 283	-	61 to 283	-	416 to 638	-
SC 13	Race Track Rd/ Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	D	1,410	17 to 34	-	18 to 36	-	93 to 111	-
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	D	1,410	14 to 39	-	14 to 39	-	89 to 114	-
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	D	1,410	4 to 53	-	5 to 65	-	80 to 140	-
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	D	1,410	16 to 52	-	20 to 63	-	95 to 138	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
SJ 01	Walnut Grove Rd	Sacramento Co./ SJ Co. Line	I-5	C	790	141 to 232	-	151 to 248	-	866 to 963	13 (6AM-7PM)
SJ 02	Peltier Rd	Blossom Rd	I-5	C	680	8 to 23	-	8 to 23	-	83 to 98	-
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	C	790	108 to 209	-	108 to 209	-	1,413 to 1,514	13 (6AM-7PM)
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	C	790	69 to 171	-	84 to 209	-	1,389 to 1,514	13 (6AM-7PM)
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	D	1,600	521 to 824	-	636 to 1,005	-	2,326 to 2,695	13 (6AM-7PM)
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	D	1,410	190 to 298	-	232 to 364	-	1,922 to 2,054	13 (6AM-7PM)
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	D	3,540	418 to 769	-	535 to 984	-	2,225 to 2,674	-
STK 01	Eight Mile Rd	Stockton City Limits	I-5	E	1,870	309 to 769	-	377 to 938	-	452 to 1,013	-
TRA 01	Tracy Blvd	Tracy City Limits	I-205	E	1,870	309 to 759	-	377 to 926	-	1,682 to 2,231	11 (7AM-6PM)
WS 01	Harbor Blvd	Industrial Blvd	US 50	D	3,540	1,140 to 2,317	-	1,355 to 2,753	-	3,750 to 5,148	13 (6AM-7PM)
WS 02	Industrial Blvd/ Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	C	1,920	773 to 1,858	-	943 to 2,267	2 (7-8AM; 5-6PM)	3,338 to 4,662	13 (6AM-7PM)
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	C	1,920	546 to 1,718	-	655 to 2,062	1 (5-6PM)	3,050 to 4,457	13 (6AM-7PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	C	680	42 to 146	-	49 to 172	-	2,444 to 2,567	13 (6AM-7PM)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	C	680	74 to 249	-	78 to 263	-	153 to 338	-

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

ID	Segment	From	To	LOS Threshold	LOS Hourly Volume Threshold	Baseline Conditions		Baseline Plus Background Growth Conditions		BPBGPP Conditions	
						Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold	Hourly Volume Range (6AM to 7PM)	Hours Operating Worse Than LOS Threshold
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./ Yolo Co. Line	C	680	25 to 63	-	31 to 77	-	2,426 to 2,472	13 (6AM-7PM)
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	C	680	28 to 77	-	34 to 94	-	2,429 to 2,489	13 (6AM-7PM)

- Notes:
- (1) Facility is analyzed as a Caltrans facility under Baseline Conditions and a local facility under Baseline Plus Construction Conditions – roadway is relinquished to local jurisdiction after Baseline Year (2009). LOS Threshold is LOS C with an hourly volume threshold of 970 under Baseline Conditions and changes to LOS D under Baseline Plus Construction Conditions.
 - (2) Facility is analyzed as a local facility under Baseline Conditions and a Caltrans facility under Baseline Plus Construction Conditions – roadway is adopted as a State facility after Baseline Year (2009). LOS Threshold is LOS D under Baseline Conditions and changes to LOS C under Baseline Plus Construction Conditions.

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

TABLE 16: SEPARATE CORRIDORS (ALTERNATIVE 9) PROJECT ROADWAY PAVEMENT IMPACTS

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line	Acceptable	Yes	No
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	Acceptable	Yes	No
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)	Acceptable	Yes	No
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits	Acceptable	Yes	Yes
CC 01	Bethel Island Rd	Oakley City Limits	End	Deficient	Yes	Yes
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy	Deficient	No	No
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	Deficient	Yes	Yes
CC 04	Byron Hwy	Delta Rd	Old SR 4	Acceptable	No	No
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	Deficient	Yes	Yes
CT 01	I-5 NB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 02	I-5 SB	Florin Rd	Pocket Rd	Deficient	Yes	Yes
CT 03	I-5 NB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 04	I-5 SB	Pocket Rd	Laguna Blvd	Deficient	Yes	Yes
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd	Deficient	Yes	Yes
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd	Deficient	Yes	Yes
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd	Acceptable	Yes	No
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd	Deficient	No	No
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd	Acceptable	No	No
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd	Acceptable	Yes	No
CT 15	I-5 NB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 16	I-5 SB	Peltier Rd	Turner Rd	Acceptable	Yes	No
CT 17	I-5 NB	Turner Rd	SR 12	Acceptable	Yes	No
CT 18	I-5 SB	Turner Rd	SR 12	Acceptable	Yes	No
CT 19	I-5 NB	SR 12	Eight Mile Rd	Deficient	Yes	Yes
CT 20	I-5 SB	SR 12	Eight Mile Rd	Acceptable	Yes	No
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln	Deficient	No	No
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln	Acceptable	No	No
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge	Deficient	No	No
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd	Deficient	No	No
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd	Deficient	No	No
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd	Deficient	No	No
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge	Deficient	No	No
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)	Not Applicable	Yes	No
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge	Acceptable	Yes	No
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)	Deficient	Yes	Yes
CT 31	SR 160	A St (Isleton)	SR 12	Deficient	Yes	Yes
CT 32	SR 160	SR 12	Brannan Island Rd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	Deficient	Yes	Yes
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry	Deficient	No	No
CT 35	I-80 EB	Suisun Valley Rd	SR 12	Acceptable	Yes	No
CT 36	I-80 WB	SR 12	Suisun Valley Rd	Acceptable	Yes	No
CT 37	SR 12 EB	I-80	Beck Ave	Acceptable	Yes	No
CT 38	SR 12 WB	Beck Ave	I-80	Acceptable	Yes	No
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	Acceptable	Yes	No
CT 40	SR 12	Sunset Ave/Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy	Acceptable	Yes	No
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	Deficient	Yes	Yes
CT 42	SR 12	SR 113	SR 84 (River Rd)	Deficient	Yes	Yes
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	Not Applicable	Yes	No
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	Deficient	Yes	Yes
CT 45	SR 12	Sacramento Co./SJ Co. Line	I-5	Deficient	Yes	Yes
CT 46	I-80 EB	SR 113	Pedrick Rd	Deficient	Yes	Yes
CT 47	I-80 WB	Pedrick Rd	SR 113	Acceptable	Yes	No
CT 48	SR 113	I-80	Dixon City Limits	Acceptable	Yes	No
CT 49	SR 113	Dixon City Limits	SR 12	Deficient	Yes	Yes
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	Acceptable	Yes	No
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	Deficient	Yes	Yes
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	Deficient	Yes	Yes

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	Deficient	Yes	Yes
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	Deficient	Yes	Yes
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	Acceptable	Yes	No
CT 58	I-205 EB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 59	I-205 WB	I-580	Mountain House Pkwy	Acceptable	Yes	No
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	Acceptable	Yes	No
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd	Acceptable	Yes	No
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr	Acceptable	Yes	No
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits	Deficient	No	No
OAK 01	Main Street (Old SR 4)	SR 160	Cypress Rd	Deficient	Yes	Yes
OAK 02	Main Street (Old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	Deficient	Yes	Yes
OAK 03	Cypress Rd	Main Street (Old SR 4)	Bethel Island Rd	Acceptable	Yes	No
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits	Deficient	No	No
OAK 05	Delta Rd	Main Street (Old SR 4)	Byron Hwy	Deficient	No	No
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)	Deficient	No	No
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits	Acceptable	No	No
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)	Not Applicable	No	No
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5	Deficient	No	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd	Acceptable	No	No
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd	Deficient	No	No
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd	Deficient	No	No
SC 06	Twin Cities Rd	River Rd	I-5	Acceptable	Yes	No
SC 07	Twin Cities Rd	I-5	Franklin Blvd	Deficient	Yes	Yes
SC 08	Sutter Slough Bridge Rd	Sacramento Co./Yolo Co. Line	Paintersville Bridge	Deficient	Yes	Yes
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd	Deficient	Yes	Yes
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge	Deficient	Yes	Yes
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./SJ Co. Line	Acceptable	Yes	No
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge	Acceptable	Yes	No
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island	Deficient	No	No
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)	Deficient	No	No
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12	Acceptable	No	No
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12	Acceptable	No	No
SJ 01	Walnut Grove Rd	Sacramento Co./SJ Co. Line	I-5	Deficient	Yes	Yes
SJ 02	Peltier Rd	Blossom Rd	I-5	Deficient	No	No
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd	Acceptable	Yes	No
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits	Acceptable	Yes	No
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy	Acceptable	Yes	No

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Roadway	From	To	Baseline Conditions	Baseline Plus Project Conditions	
					Project Results in Construction Trips Added to Roadway	Project Results in Impact to Deficient Roadway
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd	Acceptable	Yes	No
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205	Acceptable	Yes	No
STK 01	Eight Mile Rd	Stockton City Limits	I-5	Deficient	Yes	Yes
TRA 01	Tracy Blvd	Tracy City Limits	I-205	Deficient	Yes	Yes
WS 01	Harbor Blvd	Industrial Blvd	US 50	Acceptable	Yes	No
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	Acceptable	Yes	No
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	Deficient	Yes	Yes
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	Deficient	Yes	Yes
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd	Deficient	Yes	Yes
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line	Deficient	Yes	Yes
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd	Deficient	Yes	Yes

1

2

**BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015**

Impact Statements

The section below describes the roadway impacts associated with construction of the proposed project. Figure 19-3 shows the study roadway segments that have significant roadway operation impacts. Figure 19-4 shows the study roadway segments that have significant pavement condition impacts.

Table 17 summarizes the number of impacted study roadways by alternative.

TABLE 17: CONSTRUCTION IMPACT SUMMARY

Type of Impact	Conveyance Alternative				
	Pipeline/Tunnel	Modified Pipeline/Tunnel	East Canal	West Canal	Through Delta/Separate Corridors
Roadway Operations	33	36	39	56	51
Pavement Conditions	43	42	46	43	32

Notes:

Table shows the number of impacted study roadway segments.

Pipeline/Tunnel (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8)

TRANS-1: The proposed project would add construction vehicle trips to roadway segments resulting in LOS conditions under BPBGPP conditions in excess of LOS thresholds.

As shown in Table 7, construction of the proposed project would add trips to roadways already operating below LOS thresholds under BPBG Conditions, or cause the hourly LOS for roadway segments to potentially degrade from an acceptable LOS under BPBG Conditions to a LOS under BPBGPP conditions that is less than the LOS thresholds.

TRANS-2: The proposed project would add construction vehicle trips to roadway segments exacerbating unacceptable pavement conditions under baseline plus project conditions.

As shown in Table 8, construction of the proposed project would contribute to further deterioration of the baseline pavement condition, which is less than the acceptable Pavement Condition Index (PCI) or similar applicable threshold.

Modified Pipeline/Tunnel (Alternatives 4)

TRANS-3: The proposed project would add construction vehicle trips to roadway segments resulting in LOS conditions under BPBGPP conditions in excess of LOS thresholds.

As shown in Table 9, construction of the proposed project would add trips to roadways already operating below LOS thresholds under BPBG Conditions, or cause the hourly LOS for roadway segments to potentially degrade from an acceptable LOS under BPBG Conditions to a LOS under BPBGPP conditions that is less than the LOS thresholds.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

TRANS-4: The proposed project would add construction vehicle trips to roadway segments exacerbating unacceptable pavement conditions under baseline plus project conditions.

As shown in Table 10, construction of the proposed project would contribute to further deterioration of the baseline pavement condition, which is less than the acceptable Pavement Condition Index (PCI) or similar applicable threshold.

East Canal (Alternatives 1B, 2B, and 6B)

TRANS-5: The proposed project would add construction vehicle trips to roadway segments resulting in unacceptable LOS conditions under BPBGPP conditions.

As shown in Table 11, construction of the proposed project would add trips to roadways already operating below LOS thresholds under BPBG Conditions, or cause the hourly LOS for roadway segments to potentially degrade from an acceptable LOS under BPBG Conditions to a LOS under BPBGPP conditions that is less than the LOS thresholds.

TRANS-6: The proposed project would add construction vehicle trips to roadway segments exacerbating unacceptable pavement condition under baseline plus project conditions.

As shown in Table 12, construction of the proposed project would contribute to further deterioration of the baseline pavement condition, which is less than the acceptable Pavement Condition Index (PCI) or similar applicable threshold.

West Canal (Alternatives 1C, 2C, and 6C)

TRANS-7: The proposed project would add construction vehicle trips to roadway segments resulting in unacceptable LOS conditions under BPBGPP conditions.

As shown in Table 13, construction of the proposed project would add trips to roadways already operating below established LOS thresholds under BPBG Conditions, or cause the hourly LOS for roadway segments to potentially degrade from an acceptable LOS under BPBG Conditions to a LOS under BPBGPP Conditions that is less than LOS thresholds. This is a *significant* impact.

TRANS-8: The proposed project would add construction vehicle trips to roadway segments exacerbating unacceptable pavement condition under baseline plus project conditions.

As shown in Table 14, construction of the proposed project would contribute to further deterioration of the baseline pavement condition, which is less than the acceptable Pavement Condition Index (PCI) or similar applicable threshold. This is a *significant* impact.

Through Delta/Separate Corridors (Alternative 9)

TRANS-9: The proposed project would add construction vehicle trips to roadway segments resulting in unacceptable LOS conditions under baseline plus construction conditions.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1 As shown in Table 15, construction of the proposed project would add trips to roadways already
2 operating below LOS thresholds under BPBG Conditions, or cause the hourly LOS for roadway segments
3 to potentially degrade from an acceptable LOS under BPBG Conditions to a LOS under BPBGPP
4 Conditions that is less than LOS thresholds. This is a *significant* impact

5 **TRANS-10: The proposed project would add construction vehicle trips to roadway segments**
6 **exacerbating unacceptable pavement condition under baseline plus project conditions.**

7 As shown in Table 16, construction of the proposed project would contribute to further deterioration of
8 the baseline pavement condition, which is less than the acceptable Pavement Condition Index (PCI) or
9 similar applicable threshold. This is a *significant* impact.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

7. Mitigation Measures

Potential mitigation measures are recommended where feasible to avoid or substantially reduce the significant construction traffic impacts. These measures are listed below and generally structured to focus first on avoidance, then reduction and finally compensation to reduce impacts. The correspondence between the impact statements and the applicable mitigation measures is as follows.

IMPACTS	POTENTIAL MITIGATION MEASURES					
	TRANS-1a	TRANS-1b	TRANS-1c	TRANS-2a	TRANS-2b	TRANS-2c
TRANS-1, 3, 5, 7, 9	X	X	X			
TRANS-2, 4, 6, 8, 10				X	X	X

Notes:

Mitigation Measure TRANS-1a applies to all impacts because it contains construction contract specifications that are needed to implement the other mitigation measures.

Mitigation Measure TRANS-1a: Implement site-specific construction traffic management plan

Prior to construction, the BDCP proponents will be responsible for project management and may contract with one or more construction management firms to assist in ensuring that construction contractors' crews and schedules are coordinated and that the plans and specifications are being followed. The BDCP proponents will also ensure development of site-specific construction traffic management plans (TMPs) that address the specific steps to be taken before, during, and after construction to minimize traffic impacts, including the mitigation measures and environmental commitments identified in this EIR/EIS. This will include potential expansion of the study area identified in this EIR/EIS. This will include potential expansion of the study area identified in this EIR/EIS to capture all potentially significantly affected roadway segments.

The BDCP proponents will be responsible for developing the TMPs in consultation with the applicable transportation entities, including the following.

- Caltrans for state and federal roadway facilities;
- Local agencies for local roads;
- Transit providers;
- Rail operators;
- The U.S. Coast Guard;
- City and county parks departments; and
- The California Department of Parks and Recreation (DPR).

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

The BDCP proponents will also ensure that the TMPs are implemented prior to beginning construction at a site. If necessary to minimize unexpected operational impacts or delays experienced during real-time construction, the BDCP proponents will also be responsible for modifying the traffic management plan to reduce these effects.

Each TMP will address the following, as needed. Implementation of this measure will ensure operational traffic impacts and delays experienced during construction will be minimized to the greatest extent feasible.

- Signage warning of roadway surface conditions such as loose gravel, steel plates or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic.
- Signage and barricades to be used around the work sites.
- In-water work areas will be indicated by buoys, signage, or other effective means to warn boaters of their presence and restrict access. Warning devices and signage (e.g., “boats keep out” or “no wake zone” labeled buoys) will be in compliance with the U.S. Coast Guard Private Aid to Navigation requirements (U.S. Coast Guard 2012) and effective during non-daylight hours and periods of dense fog.
- Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic.
- Notifications for the public, emergency providers, cycling organizations, bike shops, and schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and DPR, where applicable, describing construction activities that could affect transportation and water navigation.
- Outreach (via public meetings and/or flyers and other advertisements)
- Procedures for construction area evacuation in the case of an emergency declared by county or other local authorities.
- Alternate access routes via detours and bridges to maintain continual circulation for local travelers in and around construction zones, including bicycle riders, pedestrians, and boaters, where applicable.
- Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits.
- Notifications to commercial and leisure boating community of proposed barge operations in the waterways, including posting notices at Delta marinas and public launch ramps. This information will provide details regarding construction site location(s), construction schedules, and identification of no-wake zone, speed restricted zones, and/or detours, where applicable.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

- No-wake zone and speed-restrictions will be established as part of development of the site-specific plans and will be determined to protect the safety of construction workers and recreationists.
- Designation of areas where nighttime construction will occur.
- Plans to relocate school bus drop-off and pick-up locations if they will be affected during construction.
- Scheduling for oversized material deliveries to the work site and haul routes.
- Provisions that direct haulers are to pull over in the event of an emergency. If an emergency vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers will be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency.
- Control for any temporary road closure, detour, or other disruption to traffic circulation, including any temporary partial water channel closures.
- Designated offsite vehicle staging and parking areas.
- Posted information for contact in case of emergency or complaint.
- Daily construction time windows during which construction is restricted or rail operations would need to be suspended for any activity within railroad rights of way.
- Coordination with rail providers (BNSF Railway, Amtrak, and UPRR) to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures.
- Coordination with transit providers (SCT, Tri-Delta, Rio Vista, and Greyhound Bus Lines) to develop daily construction time windows during which transit operations would not be either detoured or significantly slowed.
- Routinely post information to the 511.org website regarding construction delays and detours.
- Other actions to be identified and developed as may be needed by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized.

Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on Congested Roadway Segments

Where feasible, limit construction activity to fit within available reserve capacity or shift construction activity to hours with more reserve capacity so as to achieve acceptable LOS conditions (see Table 2). The BDCP proponents will include in the bid specifications a requirement that the contractor submit a

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

proposal for a process for determining when the hours of construction can feasibly be limited to avoid operational deficiencies on identified roadway segments as specified in Table 18.

Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter Into Mitigation Agreements to Enhance Capacity of Congested Roadway Segments

Prior to commencement of construction activities substantially affecting transportation facilities, the BDCP proponents will make a good faith effort to enter into mitigation agreements with affected state, regional, or local agencies ("affected agencies") to verify the location, extent, timing, and fair share cost to be paid for capacity enhancements to the identified roadway segments specified in Table 18.

Implementation of this measure is intended to provide funding from BDCP proponents sufficient to provide their fair share of the cost of capacity expansion so that traffic operating conditions (i.e., LOS) on study area roadways do not operate at a level of service or delay that is worse than the pre-project conditions (to the extent feasible in light of costs, logistics, and other factors). The BDCP proponents will include in the bid specifications requirements that the contractor(s) ensure that all enhancements are conducted in compliance with applicable standards of affected agencies and with any applicable mitigation agreements, as described below.

In attempting in good faith to enter into mitigation agreements with affected agencies, BDCP proponents shall be guided by the following principles. The BDCP proponents shall be responsible for their fair share costs of all feasible capacity-expanding physical improvements jointly determined by BDCP proponents and the affected agencies to be necessary, feasible, and available to reduce the severity of the BDCP's significant construction-related transportation impacts. Fair share calculations shall account not only for traffic levels as they existed at the time of the public release of the BDCP Draft EIR/EIS, but also for "background growth" between that time frame and the commencement of BDCP construction activities, as well as any probable future projects in the affected agency or neighboring agencies that will likely contribute to the need for, and directly benefit from, increased capacity.

(a) The BDCP proponents' contribution toward such improvements may take any, or some combination, of the following forms:

1. Construction of improvements, which may be subject to fee credits and/or reimbursement, coordinated by the affected agency, from other fee-paying development projects if available with respect to improvements that would also benefit such fee-paying development projects;
2. The payment of impact fees to the affected agency in amounts that constitute the BDCP proponents' fair share contributions to the construction of the required improvements, consistent with the affected agency's Capital Improvement Program ("CIP") or other funding program that meets the definition of a "reasonable plan for mitigation" under CEQA case law (i.e., a plan that ensures that (i) the fees collected from the BDCP proponents will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time);

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

- 3 The payment of adopted regional impact fees that would provide funding for transportation facilities that are affected by multiple agencies, except where the BDCP proponents' payments of other fees or construction of improvements within the affected agency will create credit against the payment of regional impact fees;
- 4 The payment of impact fees to the affected agency in amounts that constitute the BDCP proponents' fair share contributions to the construction of improvements within other agencies and not the affected agency, which payments to the affected agency and transmittal of fees to other agency would occur through one or more enforceable agreements, provided that for each required improvement there is a reasonable plan for mitigation that ensures that (i) the fees collected from the BDCP proponents will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time; and/or
- 5 The payment of impact fees to the California Department of Transportation ("Caltrans") in amounts that constitute the BDCP proponents' fair share contributions to the construction of improvements on federal or state highways or freeways needed in part because of the BDCP, to be made available to Caltrans if and when Caltrans, DWR, and any other the affected agency enter into an enforceable agreement consistent with state law, provided that, for each required improvement, Caltrans has a reasonable mitigation plan that ensures that (i) the fees collected from the BDCP proponents will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time.

In order to obtain the most fair, accurate, and up-to-date calculations of the BDCP proponents' fair share of the costs of required improvements, the agreement(s) reached between BDCP proponents and the affected agency or agencies shall also provide for the following: (i) that the traffic models to be used be operated by transportation consultant mutually acceptable to both BDCP proponents and the affected agency or agencies; and (ii) that the calculations account for (A) newly approved projects cumulatively that contribute to transportation-related impacts and that therefore should contribute to the funding of necessary improvements, and (B) up-to-date cost calculations for the construction of needed improvements based on recent changes in the costs of materials, labor, and other inputs.

Mitigation Measure TRANS-2a: Prohibit Construction Activity on Physically Deficient Roadway Segments

The BDCP proponents will, to the extent feasible include in the bid specifications prohibitions against construction traffic from using roadway segments with pavement conditions below the thresholds identified in this study (i.e., an IRI rating greater than 170 or a PCI rating worse than 55). Implementation of this measure would prohibit all construction traffic on the physically deficient roadway segments listed in Tables 8, 10, 12, 14, and 16, if feasible.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Mitigation Measure TRANS-2b: Limit Construction Activity on Physically Deficient Roadway Segments

If complete avoidance of physically deficient roadway segments as described in Mitigation Measure TRANS-2a is not feasible, construction activity will be limited to the extent feasible on the deficient roadways identified in Tables 8, 10, 12, 14, and 16. Implementation of this measure will reduce continuing deterioration of pavement conditions on the most damaged roadways in the study area. The BDCP proponents will include in the bid specifications requirements that limit the amount of construction traffic on roadway segments with pavement conditions below the thresholds identified in this study (i.e., an IRI rating greater than 170 or a PCI rating worse than 55), if feasible. Trucks would be prohibited and construction traffic would be limited to passenger vehicles on travel routes with pavement conditions worse than the thresholds identified in this study (i.e., an IRI rating greater than 170 or a PCI rating worse than 55).

Mitigation Measure TRANS-2c: Improve Physical Condition of Affected Roadway Segments as Stipulated in Mitigation Agreements or Encroachment Permits

If use of physically deficient roadways cannot be avoided or limited as specified in Mitigation Measures TRANS-2a and TRANS-2b, it may be necessary to improve the deficient roadways identified in Tables 8, 10, 12, 14, or 16, or make other necessary infrastructure improvements, if any, before construction to make them suitable for use during construction. Additionally, all affected roadways would be returned to preconstruction condition or better following construction. Implementation of this measure will ensure that construction activities will not worsen pavement conditions, relative to Existing Conditions.

Prior to construction, the BDCP proponents will make a good faith effort to enter into mitigation agreements with or to obtain encroachment permits from affected agencies to verify what the location, extent, timing, and fair share cost to be paid by the BDCP proponents for any necessary pre- and post-construction physical improvements. The fair share amount would be either the cost to return the affected roadway segment to its preconstruction condition or a contribution to programmed planned improvements. Repairs may occur before or after construction and may include overlays, other surface treatments, or roadway reconstruction. The flood protection benefits of roadways will also be considered in developing and implementing activities pursuant to this measure

Pre-construction analyses of existing pavement conditions will be conducted just prior to starting construction for any proposed construction traffic travel routes. The preconstruction pavement analysis will establish the baseline for required improvements and will be based on the PCI or IRI methodologies described in this EIR/EIS or an equivalent method as agreed to by the BDCP proponents and the affected agencies. Relevant flood protection agencies will also be consulted during the design of roadway improvements.

The BDCP proponents will include in the bid specifications stipulations that require the contractor(s) to conduct the pre-construction pavement analysis and conduct all improvements in compliance with

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1 applicable standards of affected agencies, as stipulated in the mitigation agreements or encroachment
2 permits.

3 It is not anticipated that project construction could cause the need for major transportation infrastructure
4 improvements, such as the need to upgrade or repair existing bridges or the need to construct new
5 highway interchanges. To the extent that construction activities could cause the need for such major
6 transportation infrastructure improvements, the BDCP proponents retain the flexibility to seek alternative
7 means of transporting people, equipment, and materials to construction sites, such as via barges, to avoid
8 the need for such major infrastructure improvements, if any.

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

1

TABLE 18: ROADWAY TRAFFIC OPERATIONS MITIGATION SUMMARY

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
ALA 01	Byron Hwy	Contra Costa Co./Alameda Co. Line	Alameda Co./San Joaquin Co. Line				TRANS-1b (avoid 6-10AM & 3-7PM)	TRANS-1b (892 max hourly trips)
BRE 01	Brentwood Blvd (old SR 4)	Delta Rd (Oakley City Limits)	Balfour Rd	TRANS-1b (381 max hourly trips between 6AM-3PM & 4-7PM; avoid 3-4 PM)	TRANS-1b (avoid 8-9AM & 11-7PM)	TRANS-1b (399 max hourly trips between 6AM-3PM & 4-7PM; avoid 3-4 PM)	TRANS-1b (avoid 7AM-7PM; or 234 max hourly trips)	TRANS-1b (399 max hourly trips between 6AM-3PM & 4-7PM; avoid 3-4 PM)
BRE 02	Brentwood Blvd (old SR 4)	Balfour Rd	Brentwood City Limits (South)					TRANS-1b (6-7AM; 9AM-4PM or max 2,590 hourly trips)
BRE 03	Balfour Rd	Brentwood Blvd (Old SR 4)	Brentwood City Limits					
CC 01	Bethel Island Rd	Oakley City Limits	End					
CC 02	Balfour Rd	Brentwood City Limits	Byron Hwy					
CC 03	Old SR 4	Brentwood City Limits (South)	Marsh Creek Rd	TRANS-1b (163 max hourly trips between 6-7AM, 9AM-2PM, & 6-7PM; avoid 7-9AM & 2-6PM)	TRANS-1b (163 max hourly trips between 6-7AM, 9AM-2PM, & 6-7PM; avoid 7-9AM & 2-6PM)	TRANS-1b (165 max hourly trips between 6-7AM, 8AM-3PM, & 6-7PM; avoid 7-8AM & 3-6PM)	TRANS-1b (165 max hourly trips between 6-7AM, 8AM-3PM, & 6-7PM; avoid 7-8AM & 3-6PM)	TRANS-1b (165 max hourly trips between 6-7AM, 8AM-3PM, & 6-7PM; avoid 7-8AM & 3-6PM)
CC 04	Byron Hwy	Delta Rd	Old SR 4					

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CC 05	Byron Hwy	SR 4	Contra Costa Co./Alameda Co. Line	TRANS-1b (avoid 8-9AM, 3-4PM, & 5-6PM)	TRANS-1b (avoid 8-9AM, 3-4PM, & 5-6PM)		TRANS-1b (avoid 6-11AM & 12-7PM; or 620 max hourly trips)	TRANS-1b (620 max hourly trips)
CT 01	I-5 NB	Florin Rd	Pocket Rd	TRANS-1b (avoid 7-8AM)	TRANS-1b (avoid 7-8AM)	TRANS-1b (avoid 7-8AM)	TRANS-1b (avoid 7-9AM)	
CT 02	I-5 SB	Florin Rd	Pocket Rd	TRANS-1b (avoid 4-6PM)	TRANS-1b (avoid 4-6PM)	TRANS-1b (avoid 4-6PM)	TRANS-1b (avoid 4-6PM)	
CT 03	I-5 NB	Pocket Rd	Laguna Blvd					
CT 04	I-5 SB	Pocket Rd	Laguna Blvd					
CT 05	I-5 NB	Laguna Blvd	Elk Grove Blvd					
CT 06	I-5 SB	Laguna Blvd	Elk Grove Blvd					
CT 07	I-5 NB	Elk Grove Blvd	Hood Franklin Rd					
CT 08	I-5 SB	Elk Grove Blvd	Hood Franklin Rd					
CT 09	I-5 NB	Hood Franklin Rd	Twin Cities Rd					
CT 10	I-5 SB	Hood Franklin Rd	Twin Cities Rd					
CT 11	I-5 NB	Twin Cities Rd	Walnut Grove Rd					
CT 12	I-5 SB	Twin Cities Rd	Walnut Grove Rd					
CT 13	I-5 NB	Walnut Grove Rd	Peltier Rd				TRANS-1b (avoid 4-5PM)	
CT 14	I-5 SB	Walnut Grove Rd	Peltier Rd				TRANS-1b (avoid 3-5PM)	
CT 15	I-5 NB	Peltier Rd	Turner Rd					

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 16	I-5 SB	Peltier Rd	Turner Rd					
CT 17	I-5 NB	Turner Rd	SR 12					
CT 18	I-5 SB	Turner Rd	SR 12					
CT 19	I-5 NB	SR 12	Eight Mile Rd					
CT 20	I-5 SB	SR 12	Eight Mile Rd					
CT 21	I-5 NB	Eight Mile Rd	Hammer Ln					
CT 22	I-5 SB	Eight Mile Rd	Hammer Ln					
CT 23	SR 160 (Freeport Blvd)	Sacramento City Limits	Freeport Bridge				TRANS-1b (1,234 max hourly trips)	
CT 24	SR 160 (Freeport Blvd/River Rd)	Freeport Bridge	Scribner Rd					
CT 25	SR 160 (River Rd)	Scribner Rd	Hood Franklin Rd					
CT 26	SR 160 (River Rd)	Hood Franklin Rd	Lambert Rd					
CT 27	SR 160 (River Rd)	Lambert Rd	Paintersville Bridge					
CT 28	SR 160 (Paintersville Bridge)	Sutter Slough Bridge Rd	SR 160 (River Rd)					
CT 29	SR 160	Paintersville Bridge	Walnut Grove Bridge			TRANS-1b (1,593 max hourly trips)	TRANS-1b (1,593 max hourly trips)	TRANS-1b (1,593 max hourly trips)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 30	SR 160 (River Rd)	Walnut Grove Bridge	A St (Isleton)			TRANS-1b (1,275 max hourly trips)	TRANS-1b (1,275 max hourly trips)	TRANS-1b (1,275 max hourly trips)
CT 31	SR 160	A St (Isleton)	SR 12			TRANS-1b (1,362 max hourly trips)	TRANS-1b (1,362 max hourly trips)	TRANS-1b (1,362 max hourly trips)
CT 32	SR 160	SR 12	Brannan Island Rd	TRANS-1b (avoid 6-7AM & 3-6PM)	TRANS-1b (avoid 6-10AM & 2-7PM)	TRANS-1b (814 max hourly trips)	TRANS-1b (814 max hourly trips)	TRANS-1b (814 max hourly trips)
CT 33	SR 84 (Jefferson Blvd)	West Sacramento City Limits	Courtland Rd	TRANS-1b (92 max hourly trips between 6-8AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)	TRANS-1b (92 max hourly trips between 6-8AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)	TRANS-1b (101 max hourly trips between 6-8AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)	TRANS-1b (101 max hourly trips between 6-8AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)	TRANS-1b (101 max hourly trips between 6-8AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)
CT 34	SR 84 (Courtland Rd/Ryer Ave)	Courtland Rd	Cache Slough Ferry					
CT 35	I-80 EB	Suisun Valley Rd	SR 12	TRANS-1b (avoid 3-6PM)	TRANS-1b (avoid 3-6PM)	TRANS-1b (avoid 3-6PM)	TRANS-1b (avoid 2-6PM)	TRANS-1b (avoid 2-7PM)
CT 36	I-80 WB	Suisun Valley Rd	SR 12	TRANS-1b (421 max hourly trips between 10AM-2PM & 6-7PM; avoid 6-10 AM & 2-6 PM)	TRANS-1b (avoid 6-10AM & 1-6PM)	TRANS-1b (801 max hourly trips between 9AM-3PM & 6-7PM; avoid 6-9 AM & 3-6 PM)	TRANS-1b (801 max hourly trips between 9AM-3PM; & 6-7PM; avoid 6-9 AM & 3-6 PM)	TRANS-1b (801 max hourly trips between 9AM-3PM & 6-7PM; avoid 6-9 AM & 3-6 PM)
CT 37	SR 12 EB	I-80	Beck Ave		TRANS-1b (avoid 5-7PM)	TRANS-1b (737 max hourly trips)	TRANS-1b (avoid 11AM-7PM)	TRANS-1b (737 max hourly trips)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 38	SR 12 WB	I-80	Beck Ave			TRANS-1b (avoid 6-8AM)	TRANS-1b (avoid 6-10AM)	TRANS-1b (995 max hourly trips)
CT 39	SR 12	Beck Ave	Sunset Ave/Grizzly Island Rd	TRANS-1b (avoid 4-6PM)	TRANS-1b (avoid 3-6PM)	TRANS-1b (946 max hourly trips)	TRANS-1b (946 max hourly trips)	TRANS-1b (946 max hourly trips)
CT 40	SR 12	Sunset Ave/Grizzly Island Rd	Walters Rd/Lawler Ranch Pkwy				TRANS-1b (avoid 6-9AM, 10AM-7PM; or 2,331 max hourly trips)	TRANS-1b (2,331 max hourly trips)
CT 41	SR 12	Walters Rd/Lawler Ranch Pkwy	SR 113	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c
CT 42	SR 12	SR 113	SR 84 (River Rd)	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c
CT 43	SR 12 (Rio Vista Bridge)	SR 84 (River Rd)	SR 160 (River Rd)	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c
CT 44	SR 12	SR 160 (River Rd)	Sacramento Co./SJ Co. Line	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c
CT 45	SR 12	Sacramento Co./SJ Co. Line	I-5	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c	TRANS-1c
CT 46	I-80 EB	SR 113	Pedrick Rd	TRANS-1b (avoid 7-9AM & 1-6PM)	TRANS-1b (avoid 7-9AM & 1-6PM)	TRANS-1b (avoid 7-8AM & 2-6PM)	TRANS-1b (avoid 7-9AM & 2-6PM)	TRANS-1b (664 max hourly trips between 6-7AM, 9AM-2PM, & 6-7PM; avoid 7-9 AM & 2-6 PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 47	I-80 WB	Pedrick Rd	SR 113	TRANS-1b (avoid 6-9AM & 3-6PM)	TRANS-1b (avoid 6-9AM & 3-6PM)	TRANS-1b (avoid 7-8AM & 3-6PM)	TRANS-1b (avoid 6-8AM & 3-6PM)	TRANS-1b (457 max hourly trips between 6-7AM, 8AM-3PM, & 6-7PM; avoid 7-8AM & 3-6PM)
CT 48	SR 113	I-80	Dixon City Limits		TRANS-1b (avoid 5-6PM)	TRANS-1b (avoid 4-6PM)	TRANS-1b (avoid 7-9AM & 10AM-7PM or 579 max hourly trips)	TRANS-1b (579 max hourly trips)
CT 49	SR 113	Dixon City Limits	SR 12	TRANS-1b (315 max hourly trips)	TRANS-1b (315 max hourly trips)	TRANS-1b (362 max hourly trips)	TRANS-1b (362 max hourly trips)	TRANS-1b (362 max hourly trips)
CT 50	SR 4 (Marsh Creek Rd)	Vasco Rd	Byron Hwy (Old SR 4)	TRANS-1b (101 max hourly trips between 6-7AM & 9AM-3PM; avoid 7-9AM & 3-7PM)	TRANS-1b (101 max hourly trips between 6-7AM & 9AM-3PM; avoid 7-9AM & 3-7PM)	TRANS-1b (115 max hourly trips between 6AM-4PM; 6-7PM; avoid 4-6PM)	TRANS-1b (115 max hourly trips between 6AM-4PM & 6-7PM; avoid 4-6PM)	TRANS-1b (115 max hourly trips between 6AM-4PM & 6-7PM; avoid 4-6PM)
CT 51	SR 4	Marsh Creek Rd	Discovery Bay Blvd	TRANS-1b (314 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (314 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (273 max hourly trips)	TRANS-1b (273 max hourly trips)	TRANS-1b (273 max hourly trips)
CT 52	SR 4	Discovery Bay Blvd	Tracy Blvd	TRANS-1b (174 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (174 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (174 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (174 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (174 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 53	SR 4 (Charter Way)	Tracy Blvd	I-5	TRANS-1b (161 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (161 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (161 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (161 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)	TRANS-1b (161 max hourly trips between 6AM-3PM & 6-7PM; avoid 3-6PM)
CT 54	I-5 NB	SR 4 (Freeway)	SR 4 (Charter Way)					
CT 55	I-5 SB	SR 4 (Freeway)	SR 4 (Charter Way)	TRANS-1b (avoid 7-8AM, 2-3PM, & 4-6PM) ²	TRANS-1b (avoid 7-8AM & 2-6PM) ²			TRANS-1b (959 max hourly trips between 6-7AM, 8AM-4PM, & 6-7PM; avoid 7-8AM & 4-6PM) ²
CT 56	I-5 NB	SR 4 (Charter Way)	Eighth Street	TRANS-1b (avoid 2-6PM) ^{2,3}	TRANS-1b (avoid 2-6PM) ^{2,3}	TRANS-1b (avoid 3-6PM) ^{2,3}	TRANS-1b (avoid 3-6PM) ^{2,3}	TRANS-1b (avoid 1-6PM) ^{2,3}
CT 57	I-5 SB	SR 4 (Charter Way)	Eighth Street	TRANS-1c ^{2,3}	TRANS-1c ^{2,3}	TRANS-1c ^{2,3}	TRANS-1c ^{2,3}	TRANS-1c ^{2,3}
CT 58	I-205 EB	I-580	Mountain House Pkwy	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 3-7PM)	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)
CT 59	I-205 WB	I-580	Mountain House Pkwy	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-10AM)
CT 60	I-205 EB	Mountain House Pkwy	Eleventh St	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)	TRANS-1b (avoid 2-7PM)
CT 61	I-205 WB	Mountain House Pkwy	Eleventh St	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-9AM)	TRANS-1b (avoid 6-7AM)	TRANS-1b (avoid 6-8AM)	TRANS-1b (avoid 6-9AM)
CT 62	I-205 EB	Grant Line Rd	Tracy Blvd					
CT 63	I-205 WB	Grant Line Rd	Tracy Blvd					

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
CT 64	I-205 EB	Tracy Blvd	MacArthur Dr					
CT 65	I-205 WB	Tracy Blvd	MacArthur Dr					
ISL 01	A St/4th St/Jackson Blvd.	SR 160	Isleton City Limits					
OAK 01	Main St (old SR 4)	SR 160	Cypress Rd					TRANS-1b (1,781 max hourly trips)
OAK 02	Main St (old SR 4)	Cypress Rd	Delta Rd (Oakley City Limits)	TRANS-1b (190 max hourly trips between 6-8AM, 9AM-2PM, & 4-7PM; avoid 8-9AM & 2-4PM)	TRANS-1b (190 max hourly trips between 6-8AM, 9AM-2PM, & 4-7PM; avoid 8-9AM & 2-4PM)	TRANS-1b (avoid 8-9AM & 2-6PM)	TRANS-1b (238 max hourly trips)	TRANS-1b (238 max hourly trips)
OAK 03	Cypress Rd	Main St (Old SR 4)	Bethel Island Rd					
OAK 04	Bethel Island Rd	Cypress Rd	Oakley City Limits					
OAK 05	Delta Rd	Main St (Old SR 4)	Byron Hwy					
SAC 01	Pocket Rd	I-5	Freeport Blvd (Old SR 160)				TRANS-1b (avoid 7-9AM & 1-7PM)	
SAC 02	Freeport Blvd (Old SR 160)	Pocket Rd	Sacramento City Limits				TRANS-1b (1,229 max hourly trips)	
SC 01	Freeport Bridge	River Rd	SR 160 (Freeport Blvd)				TRANS-1b (1,039 max hourly trips)	

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
SC 02	Hood Franklin Rd	SR 160 (River Rd)	I-5			TRANS-1b (1,268 max hourly trips)		
SC 03	Lambert Rd	SR 160 (River Rd)	Herzog Rd					
SC 04	Lambert Rd	Herzog Rd	Franklin Blvd					
SC 05	Franklin Blvd	Lambert Rd	Twin Cities Rd					
SC 06	Twin Cities Rd	River Rd	I-5				TRANS-1b (1,157 max hourly trips)	
SC 07	Twin Cities Rd	I-5	Franklin Blvd					
SC 08	Sutter Slough Bridge Rd	Sacramento Co./Yolo Co. Line	Paintersville Bridge				TRANS-1b (1,288 max hourly trips)	TRANS-1b (1,288 max hourly trips)
SC 09	River Rd (Sac Co.)	Paintersville Bridge	Twin Cities Rd				TRANS-1b (1,275 max hourly trips)	
SC 10	River Rd (Sac Co.)	Twin Cities Rd	Walnut Grove Bridge					
SC 11	Walnut Grove Rd/River Rd	Walnut Grove Bridge	Sacramento Co./SJ Co. Line				TRANS-1b (1,070 max hourly trips)	
SC 12	Isleton Rd	River Rd (Walnut Grove)/Isleton Rd Bridge	1.5 miles west of Isleton Rd Bridge					
SC 13	Race Track Rd/Tyler Island Rd	Walnut Grove Rd	Southern End of Tyler Island					
SC 14	Tyler Island Rd	Southern End of Tyler Island	SR 160 (River Rd)					

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
SC 15	Jackson Slough Rd	Isleton City Limits	SR 12					
SC 16	Jackson Slough Rd	Brannan Island Rd	SR 12					
SJ 01	Walnut Grove Rd	Sacramento Co./SJ Co. Line	I-5				TRANS-1b (552 max hourly trips)	TRANS-1b (551 max hourly trips)
SJ 02	Peltier Rd	Blossom Rd	I-5					
SJ 03	Tracy Blvd	SR 4	Clifton Court Rd			TRANS-1b (581 max hourly trips)		TRANS-1b (581 max hourly trips)
SJ 04	Tracy Blvd	Clifton Court Rd	Tracy City Limits			TRANS-1b (605 max hourly trips)		TRANS-1b (612 max hourly trips)
SJ 05	Byron Hwy	Alameda Co./San Joaquin Co. Line	Mountain House Pkwy		TRANS-1b (avoid 7-8AM)		TRANS-1b (710 max hourly trips)	TRANS-1b (710 max hourly trips)
SJ 06	Mountain House Pkwy	Byron Hwy	Arnaudo Blvd					TRANS-1b (1,088 max hourly trips)
SJ 07	Mountain House Pkwy	Arnaudo Blvd	I-205					
STK 01	Eight Mile Rd	Stockton City Limits	I-5					
TRA 01	Tracy Blvd	Tracy City Limits	I-205					TRANS-1b (1,081 max hourly trips)
WS 01	Harbor Blvd	Industrial Blvd	US 50				TRANS-1b (7-10AM; 12-7PM or 1,064 max hourly trips)	TRANS-1b (1,064 max hourly trips)

BDCP Construction Traffic Impact Analysis
ADMINISTRATIVE DRAFT REPORT – March 2015

Segment ID	Segment	From	To	Applicable Mitigation Measures in Addition to TRANS-1 (Time period for construction traffic to avoid and maximum number of hourly construction trips, if applicable) ¹				
				Pipeline/Tunnel – Alternatives 1A, 2A, 3, 5, 6A, 7, and 8	Modified Pipeline/Tunnel – Alternative 4	East Canal – Alternatives 1B, 2B, and 6B	West Canal – Alternatives 1C, 2C, and 6C	Separate Corridors – Alternative 9
WS 02	Industrial Blvd/Lake Washington Blvd	Harbor Blvd	Jefferson Blvd (Old SR 84)	TRANS-1b (387 max hourly trips between 6-7AM & 9AM-4PM; avoid 7-9AM & 4-7PM)	TRANS-1b (avoid 7-9AM & 12-7PM)	TRANS-1b (avoid 7-8AM & 4-6PM)	TRANS-1b (372 max hourly trips between 6-7 AM, 9AM-5PM, & 6-7PM; avoid 7-9AM & 5-6PM)	TRANS-1b (372 max hourly trips between 6-7 AM, 9AM-5PM, & 6-7PM; avoid 7-9AM & 5-6PM)
WS 03	Jefferson Blvd (Old SR 84)	Lake Washington Blvd	Southport Pkwy	TRANS-1b (623 max hourly trips between 6-7AM, & 9AM-3PM; avoid 8-9AM & 3-7PM)	TRANS-1b (avoid 7-9AM & 3-7PM)	TRANS-1b (avoid 8-9AM & 4-6PM)	TRANS-1b (307 max hourly trips between 6AM-5PM, & 6-7PM; avoid 5-6PM)	TRANS-1b (380 max hourly trips between 6-8 AM, 9AM-5PM, & 6-7PM; avoid 8-9AM & 5-6PM)
WS 04	Jefferson Blvd (Old SR 84)	Southport Pkwy	West Sacramento City Limits	TRANS-1b (avoid 7-9AM, 2-3PM, & 4-6PM)	TRANS-1b (avoid 7-9AM & 2-6PM)		TRANS-1b (525 max hourly trips)	TRANS-1b (525 max hourly trips)
YOL 01	River Rd (Yolo Co.)	Freeport Bridge	Courtland Rd				TRANS-1b (426 max hourly trips)	
YOL 02	River Rd (Yolo Co.)	Courtland Rd	Sacramento Co./Yolo Co. Line				TRANS-1b (612 max hourly trips)	TRANS-1b (612 max hourly trips)
YOL 03	Courtland Rd	SR 84 (Jefferson Blvd)	River Rd				TRANS-1b (597 max hourly trips)	TRANS-1b (597 max hourly trips)

- 1 Notes:
- 2 (1) For mitigation measure TRANS-1b, the maximum number of hourly construction trips is shown in parentheses within the specified time period, if applicable. If only a time period
- 3 is shown, that time period is to be avoided.
- 4 (2) I-5 North Stockton Widening is currently under construction and would eliminate the operational impact at CT 55, 56, & 57 if completed prior to construction activity.
- 5 (3) Traffic impacts are temporary and as such, capacity enhancements may not be reasonable.

Appendix 22A

Air Quality Analysis Methodology

This appendix discusses the approach and methodology used to assess construction and operational emissions associated with the water conveyance facility. The analysis evaluates maximum daily and yearly emissions to comply with CEQA and NEPA guidelines in the Plan Area (the area covered by the BDCP). Emissions analyzed include criteria pollutants and GHGs (CO₂, CH₄, N₂O, SF₆, and HFCs).

22A.1 Construction

Construction of the water conveyance facilities would generate emissions of ROG, NO_x, CO, PM₁₀, PM_{2.5}, SO₂ and GHGs (CO₂, CH₄, N₂O, SF₆, and HFCs) that would result in short-term impacts on ambient air quality in the Plan area. Emissions would originate from mobile and stationary heavy-duty equipment exhaust, marine vessel exhaust, tunneling locomotive exhaust, employee and haul truck vehicle exhaust, helicopter exhaust, site grading and earth movement, paving, electricity use, and concrete batching. Construction-related emissions vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

DWR and 5RMK Inc. (5RMK) developed construction phasing and scheduling assumptions as part of an economic analysis ("cost estimate") in 2014 for the modified pipeline alignment (MPTO). The cost estimate provides detailed information on equipment and vehicle activity (e.g., operating hours per day), as well as the start date and number of working days for each phase. Construction features analyzed in the cost estimate include the intakes, intermediate and Clifton Court forebays, and tunnel reaches. Schedule and construction activity assumptions for features not evaluated in the cost estimate, including geotechnical explorations, utility development, and tunnel segment hauling, were provided separately by DWR. The construction assumptions developed by 5RMK and DWR were used to estimate emissions, as described further below in Sections 22A.1 through 22A.9.

A similar cost estimate was developed by DWR and 5RMK in 2010 for the pipeline tunnel option (PTO) and east canal. The assumptions and methodology used in the 2010 cost estimate have been superseded by the approach utilized to develop the MPTO cost estimate. Accordingly, emissions associated with the PTO and east canal were analyzed using a combination of the 2010 and 2014 cost estimate assumptions, where appropriate, as well as activity scaling factors, as described further below. Emissions generated by the west canal and separate corridors options (SCO) were analyzed using a similar approach, since cost estimates unique to these alignments were not available at the time of analysis.

Table 22A-1 summarizes the cost estimate files that inform the emissions analysis for each feature, as well as whether any scaling factors were utilized to adjust or update the underlying cost estimate assumptions. The scaling factors were derived based on similarities in construction design among the alternatives. For example, Alternative 4 would construct three intakes, whereas Alternatives 1A, 2A, and 6A would construct five, resulting in a scaling factor of 1.67.

1

Table 22A-1. Cost Estimate Assumptions and Scaling Approach for the Air Quality and Greenhouse Gas Emissions Analysis

Feature	Assumption Source ^a	Scaling Factor							
		Alts 1A, 2A, 6A	Alts 1B, 2B, 6B	Alts 1C, 2C, 6B	Alt 3	Alt 4	Alt 5	Alt 7, 8	Alt 9
Intakes	2014 MPTO cost estimate	1.67	1.67	1.67	0.67	None	0.33	None	2.80
Intermediate Forebay	2014 MPTO cost estimate	3.33	-	-	3.33	None	3.33	3.33	-
Tunnels	2014 MPTO cost estimate	0.80	0.04	0.40	0.63	None	0.62	0.70	-
Clifton Court Forebay	2014 MPTO cost estimate	0.50	0.50	0.50	0.50	None	0.50	0.50	-
Combined Pumping Plant	2014 MPTO cost estimate	-	-	-	-	None	-	-	-
Geotechnical Explorations	DWR activity estimate	-	-	-	-	None	-	-	-
Temporary Utilities 69Kv	DWR activity estimate	0.58	0.29	0.29	0.34	None	0.34	0.40	0.15
Temporary Utilities 69kV+	DWR activity estimate	-	-	-	-	None	-	-	0.15
Permeant Utilities	DWR activity estimate	3.29	1.33	2.85	1.33	None	0.68	1.98	-
Segment Hauling	DWR activity estimate	-	-	-	-	None	-	-	-
Pumping Plants	2012 MPTO cost estimate ^b	1.67	1.67	1.67	0.67	-	0.33	None	0.67
Pipelines	2010 PTO cost estimate	None	1.77	1.23	0.56	-	0.27	0.60	-
Intermediate Pumping Plant	2010 PTO cost estimate	None	0.95	None	0.44	-	0.33	None	0.00
Canals	2010 East cost estimate	-	None	0.93	-	-	-	-	0.16
Siphons/Gates/Barriers	2010 East cost estimate	-	4.07	3.82	-	-	-	-	4.40
Bridges	2014 MPTO cost estimate ^c	-	3.01-5.42 ^d	0.00-5.57 ^d	-	-	-	-	3.00
Dredging	2014 MPTO cost estimate ^e	-	-	-	-	-	-	-	1.70

Notes

- Feature does not exist

None No scaling factor needed; the activity estimates in the assumption file were used without modification.

^a Representing the underlying source for the activity assumptions (e.g., operating hours, vehicle trips). The assumptions source is also used to define the scaling factor for each alternative. For example, the 2014 MPTO cost estimate is based on the construction of three intakes for Alternative 4. Alternatives 1A, 2A, and 6A would construction five intakes, resulting in a scaling factor of 1.67.

^b An initial draft of the MPTO cost estimate was prepared in 2012, but was superseded by the 2014 estimate. Since the pumping plants were eliminated from the construction design in 2014, the 2014 estimate did not include pumping plants. Accordingly, the 2012 MPTO cost estimate represents the best available data for construction of the pumping plants.

^c Construction of a single bridge was excerpted from the 2014 MPTO cost estimate to define the additional bridges needed for the SCO and east and west canals. Please note that construction of bridges at specific features (e.g., intakes) under the MPTO and PTO are incorporated into that features activity assumptions (i.e., there is no standalone bridge “feature” for these alignments).

^d Separate scaling factors were identified for each anticipated bridge contract, as defined below:

East Canal: Contract 1 = 3.01; Contract 2 = 4.00; Contract 3 = 5.42; Contract 4 = 4.95; Contract 5 = 3.61

West Canal: Contract 1 = 3.09; Contract 2 = 1.82; Contract 3 = 5.57; Contract 4 = 5.46; Contract 5 = 0.00

^e The dredging only activity at the Clifton Court Forebay was excerpted from the 2014 MPTO cost estimate to define dredging activities under the SCO. Please note that dredging activities at the Clifton Court Forebay under the MPTO are incorporated in the activity assumptions for the Clifton Court Forebay feature (i.e., there is no standalone dredging “feature” for the MPTO).

All equipment operating assumptions from the 2010 and 2014 cost estimates are summarized in Appendix 22B, *Air Quality Assumptions*. This appendix also provides the construction schedule (Table 22B-1), emission factors, and model outputs, as applicable. Please refer to Sections 22A.1.1 through 22A.1.9 for a detailed overview of the equations and approach used to quantify emissions from each source (e.g., heavy-duty equipment).

22A.1.1 Heavy Duty Equipment

Emission factors obtained from the CalEEMod Users Guide and ARB's OFFROAD2007 model were used to calculate exhaust emissions from heavy-duty construction equipment without environmental commitments. Equipment descriptions provided by DWR and 5RMK as part of the cost estimate were frequently model specific (e.g., CAT 963), and were not grouped into generic operating types (e.g., bulldozer). To estimate emissions using CalEEMod emission factors, which are given for generic equipment, individual equipment provided by the cost estimate was assigned a generic type based on the model description, industry resources, and professional experience.

Table 22B-2 in Appendix 22B, *Air Quality Assumptions*, summarizes the heavy-duty equipment assumed in the emissions modeling. Key assumptions include:

- Equipment load factors were based on latest Carl Moyer Program Guidelines¹ (California Air Resources Board 2011:236-237).
- Diesel equipment were evaluated based on emission factors from the CalEEMod Users Guide, whereas gasoline powered equipment were evaluated based on emission factors from the OFFROAD2007 model.
- Accessory equipment (e.g., trailers, clamshell bucket) with no engines or emissions-generating components were excluded from the analysis.
- Tunnel boring machines, tunnel fans, tunnel lights, certain air compressors, and pumps were assumed to be electric and were included in the electricity analysis (see Section 22.1.8).

Criteria pollutant, CO₂, CH₄, and N₂O (gasoline equipment only) emissions for each phase were calculated using the information summarized Table 22B-2 and Equation 22A-1.

$$\text{Equation 22A -1} \quad E_{\text{phase}} = \sum (\text{Activity} \times EF_i \times LF_i \times HP_i) \times \text{Conv}$$

Where:

E_{phase} = Total exhaust emissions for the phase, pounds per day

Activity = Equipment activity, hours per day (Table 22B-2)

EF = Engine emissions factor, grams/horsepower-hour (CalEEMod and OFFROAD)

LF = Engine load factor, unitless (Table 22B-2)

HP = Engine horsepower, unitless (Table 22B-2)

Conv = Conversion from grams to pounds, 0.002205

i = Equipment type

¹ The Carl Moyer Program provides funding to encourage the voluntary purchase of cleaner-than-required engines. Load factors provided in the guidelines account for the most recent engine technologies and regulations.

CalEEMod does not include emission factors for N₂O for off-road diesel equipment. Emissions of N₂O generated by each diesel-powered equipment piece were determined by scaling the CO₂ emissions quantified by Equation 22A-1 by the ratio of N₂O/CO₂ (0.000025) emissions expected per gallon of diesel fuel according to the Climate Registry (2015).

22A.1.2 Marine Vessels (Workboats, Passenger Boats, Tugboats)

Marine vessels used during construction include workboats, passenger boats, and tugboats. Workboats would be needed to support in-water construction of the intakes, Clifton Court Forebay, combined pumping plant, and portions of tunnel reach 6. A passenger speedboat would be required to transport personnel to exploration sites during the geotechnical investigations (MPTO only). Finally, tugboats would be used to transport a portion of the tunnel segments to Bouldin Island and the Clifton Court Forebay (MPTO only). Tunnel segments were assumed to originate from three offsite casting yards, as described further in Section 22A.1.9.

Criteria pollutant emissions from marine vessels without project commitments were quantified using activity data provided by 5RMK and DWR and the ARB's (2012) *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California* (Harbor Craft Methodology). The methodology is based on a zero hour emission rate for the engine model year in the absence of any malfunction or tampering of engine components that can change emissions, plus a deterioration rate. The deterioration rate reflects the fact that base emissions of engines change as the equipment is used due to wear of various engine parts or reduced efficiency of emission control devices.² GHG emissions were estimated using the DWR activity data and emission factors obtained from the EPA (2009).

Table 22B-3 in Appendix 22B, *Air Quality Assumptions*, summarizes the marine vessels assumed in the emissions modeling. Engine emission factors are summarized in Table 22B-4. Key assumptions include:

- Barges were assumed to be either pushed or pulled by tugboats and workboats; no emissions are generated by the barge.
- All vessels were assumed to utilize model year 2000 or older engines.

Criteria pollutant, CO₂, and CH₄ emissions for each phase were calculated using the information summarized in Tables 22B-3 and 22B-4. N₂O emissions were calculated by scaling the CO₂ emissions quantified by the N₂O/CO₂ ratio identified in Section 22.1.3.1.

Equation 22A -2
$$E_{\text{phase}} = \sum (\text{Activity}_i \times EF_i \times LF_i \times HP_i) \times \text{Conv}$$

Where:

E_{phase} = Total exhaust emissions for the phase, pounds per day

Activity = Boat activity, hours per day (Table 22B-3)

EF = Engine emissions factor, grams/hp-hr (Table 22B-4)

LF = Engine load factor, (Table 22B-3)

² ARB's deterioration factors, useful life, and zero-hour emission factors were used for all pollutants except SO_x. SO_x emissions were quantified based on brake-specific fuel consumption and a sulfur fuel content of 15 ppm, which is the sulfur content limit for California harbor craft, in accordance with California Diesel Fuel Regulations.

- HP = Engine horsepower, (Table 22B-3)
- Conv = Conversion from grams to pounds, 0.002205

22A.1.3 Locomotives

Small, mining-type locomotives would be used to convey excavated material and personnel in rail cars through the tunnel alignments. The ARB's (2010) off-road diesel engine standards were used to quantify regulated criteria pollutant emissions (ROG, NO_x, CO, and PM). The SO_x emission factor was calculated assuming a 15 parts per million (ppm) sulfur content, consistent with ARB and EPA requirements. Locomotive engine rating, based on engineering specifications (25-ton), was assumed to be 150 horsepower (Tier 1).

Table 22B-5 in Appendix 22B, *Air Quality Assumptions*, identifies the locomotive operating information assumed in the emissions modeling. Engine emission factors are summarized in Table 22B-6. Criteria pollutant and CO₂ emissions for each phase requiring locomotives were calculated using Equation 22A-3. CH₄ and N₂O emissions were estimated by scaling the CO₂ emissions quantified by the ratio of CH₄/CO₂ (0.000057) and N₂O/CO₂ (0.000025).

Equation 22A -3
$$E_{\text{phase}} = \Sigma(\text{Activity} \times \text{EF} \times \text{HP} \times \text{LF}) \times \text{Conv}$$

Where:

- E_{phas} = Total exhaust emissions for the phase, pounds per day
- Activity = Engine activity, hours per day (Table 22B-5)
- EF = Engine emissions factor, grams/horsepower-hour (Table 22B-6)
- HP = Engine horsepower, 150
- LF = Engine load factor, 0.80
- Conv = Conversion from grams to pounds, 0.002205

22A.1.4 On-Road Vehicles

22A.1.4.1 Engine Exhaust

On-road vehicles include vehicles used for material and equipment hauling, tunnel segment hauling, employee commuting, onsite crew and material movement, and as-needed supply and equipment pick-up. Emissions from on-road vehicles without project commitments were estimated using the EMFAC2014 emissions model and activity data provided by DWR and 5RMK. Similar to heavy-duty equipment, generic vehicle types were not provided. To estimate emissions using EMFAC emission factors, individual vehicles provided by DWR and 5RMK was assigned a generic type based on the model description, industry resources, and professional experience. Tables 22B-7 through 22B-10 in Appendix 22B, *Air Quality Assumptions*, summarizes vehicle data assumed in the emissions modeling. Key assumptions include:

- Criteria pollutant, CO₂, and CH₄ emission factors for diesel trucks used for material and equipment hauling are based on weighted average vehicle speeds for EMFAC's T7 Tractor vehicle category. Equipment and materials delivered to the project site will likely originate in the Bay Area, Sacramento, or Stockton. As a reasonable, yet conservative assumption, it was

assumed all equipment and material would be delivered from the Port of San Francisco (greatest distance from the project area).

- Criteria pollutant, CO₂, and CH₄ emission factors for diesel trucks used for tunnel segment hauling (MPTO only) are based on weighted average vehicle speeds for EMFAC's T7 Single vehicle category. Tunnel segments were assumed to originate from three offsite casting yards, two of which would be located in the Bay Area and one would be located in Stockton. Trip distances (miles) from each casting yard were quantified using GoogleEarth.
- Criteria pollutant and CO₂ emission factors for employee commute vehicles are based on weighted average vehicle speeds for EMFAC's LDA/LDT vehicle categories. One-way trip lengths were provided by DWR based on a geospatial analysis of labor densities in the Plan area. Each employee would make 2 trips to the project site per day.
- Criteria pollutant and CO₂ emission factors for onsite crew and material movement are based on EMFAC's LDT, T6 Utility, T6 Heavy, T6TS, and T7 Tractor categories for vehicles traveling at 5 miles per hour. Daily mileage assumptions were developed based on data from 5RMK and DWR, as shown in Appendix 22B, *Air Quality Assumptions*.
- Criteria pollutant and CO₂ emission factors for as-needed supply and equipment pick-up are based on weighted average vehicle speeds for EMFAC's LDA/LDT/T7 Tractor vehicle categories. All vehicle trips would be made to hardware or other local supply stores. An average one-way trip distance of 10 miles was assumed, based on information provided by DWR and 5RMK.
- All vehicle emission factors from EMFAC2014 were generated for the counties in which activity would occur, as determined by GIS (see Section 22A.1.6).

Criteria pollutant, CO₂, and CH₄ (diesel vehicles only) emissions for each phase were calculated using the information summarized in Appendix 22B, *Air Quality Assumptions*, and Equation 22A-4.

Equation 22A -4
$$E_{\text{phase}} = \Sigma(\text{EF} \times \text{Miles}) \times \text{Conv}$$

Where:

E_{phase} = Total exhaust emissions for the phase, pounds per day

EF = Engine emissions factor, grams/mile (EMFAC2014)

Miles = Trip distance (Tables 22B-7 through 22B-10)

Conv = Conversion from grams to pounds, 0.0002205

Emissions of CH₄, N₂O, and HFCs from gasoline-powered vehicles were determined by dividing the CO₂ emissions quantified by Equation 22A-4 by 0.95. This statistic is based on EPA's assessment that CH₄, N₂O, and HFC emissions account for 1% to 5% of on-road emissions (U.S. Environmental Protection Agency 2014a).

22A.1.4.2 Road Dust

Fugitive re-entrained road dust emissions are based on the EPA's (2006a; 2011) *Compilation of Air Pollutant Emission Factors* (AP-42) methodology, Sections 13.2.1 and 13.2.2. Offsite vehicles, including employee commuting cars and equipment and material delivery trucks, were evaluated based on Section 13.2.1 for paved roads. Onsite vehicles required for general crew and material movement were evaluated based on Section 13.2.2 for unpaved roads. Precipitation data to support

the emission factor calculations were obtained from the Western Regional Climate Center (2014).
Daily miles traveled for all vehicles were obtained from Equation 22A-4 (see above).

22A.1.5 Helicopters

Helicopters would be used during line stringing activities for the 115-230 kV transmission lines. Based on guidance provided by DWR, two light-duty helicopters were assumed to operate four hours a day to install new poles and lines (see Table 22B-11 in, Appendix 22B, *Air Quality Assumptions*). Helicopter emissions were estimated using emission factors from the Federal Aviation Administration's (FAA) Emissions and Dispersion Modeling System (EDMS), version 5.1.4. EDMS estimates emission factors for standard landing-takeoff cycles (LTO).³ EDMS does not calculate emission factors for cruising flight or for operations above 3,000 feet altitude.

Since line stringing activities would include operations beyond the standard LTO cycle, the EDMS emission factors were supplemented to account for cruising operations. Key assumptions include:

- Helicopters would fly from base to the jobsite in a cruise mode. The helicopter's cruise speed was assumed to be approximately 138 mph (MD Helicopters 2014). Fuel flow in cruise mode was estimated based on the ratio of cruise to takeoff power levels (MD Helicopters 2014). This ratio is consistent with earlier data from EPA (1985) that have often been used in EIR/EIS analyses of helicopter flight.
- The flight from base to the jobsite was assumed to take 15 minutes, corresponding in a cruise speed and nominal distance from base to jobsite of up to 35 miles. The return flight from the jobsite to base was assumed to be the same as the flight from base to the jobsite.
- Helicopters would fly at low speeds during line stringing and would hover for a significant portion of time. Based on FAA (2012), it was assumed that during line stringing the helicopter would operate at an average of approximately 85% power, and hence approximately 85% of maximum fuel flow rate.

Criteria pollutant and CO₂ emissions were calculated using the information summarized in Appendix 22B, *Air Quality Assumptions*, and Equation 22A-5.

Equation 22A -5
$$E_{\text{phase}} = \Sigma(\text{EF} \times \text{Hours}) \times \text{Conv}$$

Where:

E_{phase} = Total exhaust emissions for the phase, pounds per day

EF = Helicopter emissions factor, grams/hour (Table 22B-12)

Hours = Helicopter operating hours, hours/day (Table 22B-11)

Conv = Conversion from grams to pounds, 0.0002205

EDMS does not estimate CH₄ and N₂O emissions. CH₄ and N₂O emissions were estimated using data from EPA (2013).

³ The LTO cycle consists of the following phases: startup and taxi-Out, takeoff, climb out to the atmospheric mixing height (nominally 3,000 feet altitude), descent from 3,000 feet, landing, and taxi.

22A.1.6 Fugitive Dust from Earth Movement

Fugitive dust emissions from earth movement (i.e., site grading, bulldozing, and truck loading) were quantified using emission factors from EPA's (1998) AP-42 and CalEEMod. Emission factors for site grading and bulldozing were calculated from Section 11.9, *Western Surface Coal Mining*, of AP-42. This approach is consistent with the CalEEMod Users Guide and the resulting emission factors match CalEEMod outputs on a pound per acre and pound per hour basis. Although the CalEEMod Users Guide indicates that Section 13.2.4, *Aggregate Handling and Storage Piles*, of AP-42 is used to quantify emissions from Truck Loading, ICF could not independently derive matching emission factors through CalEEMod model runs. Since the CalEEMod results were slightly higher than the AP-42 calculations, truck loading emissions were quantified based on a pound per cubic yard emission factor obtained from the model output.

The 5RMK cost estimate provided the total acreage, borrow, excavated, and dredged material for each construction phase. The estimate also identified the maximum acreage and material that would be disturbed in any one day. Table 22B-13 in Appendix 22B, *Air Quality Assumptions*, summarizes the total and maximum daily earth movement quantities assumed in the modeling. Bulldozing equipment hours were also obtained from the cost estimate (see Table 22B-2 in Appendix 22B, *Air Quality Assumptions*). Fugitive dust emission factors from AP-42 and CalEEMod are provided in Table 22B-14.

22A.1.7 Fugitive ROG from Paving

Fugitive ROG emissions generated during paving activities were calculated using an emissions factor of 2.62 pounds of ROG per acre, as reported in the CalEEMod Users Guide appendix. Table 22B-15 in Appendix 22B, *Air Quality Assumptions*, summarizes the total and maximum daily paving acreages assumed in the modeling.

22A.1.8 Electricity Usage

Construction of the water conveyance facility will require the use of electricity for lighting, tunnel ventilation, boring, and certain types of equipment. Annual electric demand for all alternatives was provided by DWR and 5RMK and is summarized in Table 22B-16 in Appendix 22B, *Air Quality Assumptions*. Generation of this electricity will result in criteria pollutant and GHG emissions at regional power plants.

The EPA (2014b)⁴ and University of California, Davis (Delucchi 2006:110) have developed emission factors for the current generation of electricity within California (see Table 22B-15). Emissions associated with the generation of electricity were estimated by multiplying the expected annual electricity usage (Table 22B-17) by the published emission factors. As discussed in Section 22A.1.2, adopted and proposed statewide legislation will increase future energy efficiency and the proportion of renewable energy supplied to the electrical grid. Electricity emissions were therefore also estimated using adjusted factors that account for implementation of the Renewables Portfolio Standard (RPS), as discussed below.

⁴ Power will be supplied to BDCP by multiple utilities. The quantity of power supplied by each utility is currently unknown. Consequently, average statewide emission factors, as opposed to utility-specific factors, were used to quantify emissions associated with electricity consumption.

22A.1.9 Concrete Batching

22A.1.9.1 Particulate Matter

Concrete required to construct the water conveyance facility will be manufactured at batch plants that store, convey, and discharge water, cement, fine aggregate, and coarse aggregate. PM10 and PM2.5 may be emitted through the transfer of aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion. The amount of PM10 and PM2.5 generated during concrete batching depends primarily on the surface moisture content of surface materials, and the extent of fugitive emission controls.

PM10 and PM2.5 emissions from onsite concrete batching were estimated using emission factors provided the EPA's (2006b) AP-42 and concrete data provided by DWR. The total volume of concrete required to construct the major water conveyance features (e.g., Intake, pumping plants) is summarized in Table 22B-18. Daily PM10 and PM2.5 emissions from onsite concrete batching were calculated by multiplying the anticipated volume of concrete produced at each batch plant by the AP-42 dust emission factors (see Table 22B-19). A process rate of 1,100 cubic yards per day was batch plants, based on information from the cost estimate. Annual emissions were quantified based on the daily production rates and the total volume of concrete required to construct the project features.

PM10 and PM2.5 emissions from the three offsite batch plants were quantified based the volume of concrete associated with the tunnel segments and facility specific permit limits for PM10, as provided by BAAQMD and SJVAPCD through public records requests.

22A.1.9.2 Carbon Dioxide

Cement manufacturing produces CO₂ through fuel combustion and calcination. Emissions generated by on-site fuel combustion account for approximately 40% of total emissions generated by a batching facility, whereas calcination accounts for the remaining 60%. Calcination involves heating raw materials to over 2,500 °F, which liberates CO₂ and other trace materials (Portland Cement Association 2011).

Emissions generated by concrete batching were calculated based on the anticipated volume of concrete at various compression strengths. Based on data provided by DWR, structural components would require compression strength between 3,000 and 4,000 pounds per square inch (psi), whereas the tunnel segments would require strength between 6,000 and 8,000 psi. CO₂ emission factors for these strength ratios were obtained from Nisbet, Marceau, and VanGeem (2002) and the Slag Cement Association (2013) (see Table 22B-19).

Studies have calculated the CO₂ absorption rates of hardened concrete. These studies assume a 70 year service life and a 30-year demolition and recycling period for concrete materials. Given these assumptions, up to 57% of the CO₂ emitted during the cement manufacturing calcination may be re-absorbed by concrete over the 100 year life cycle (equivalent to about 7% of total batching emissions) (Haselbach 2009). While reabsorption may occur throughout the project lifetime, GHG impacts from concrete batching were conservatively evaluated assuming no reabsorption would occur.

22A.1.10 State Mandates to Reduce GHG Emissions

Actions undertaken by the state will contribute to project-level GHG reductions. For example, the state requires electric utility companies to increase their procurement of renewable resources by 2020. Renewable resources, such as wind and solar power, produce the same amount of energy as coal and other traditional sources, but do not emit any GHGs. By generating a greater amount of energy through renewable resources, electricity provided to the project will be cleaner and less GHG intensive than if the state hadn't required the renewable standard.

The analysis assumes implementation of Pavley, LCFS, and RPS. Pavley will improve the efficiency of automobiles and light duty trucks, whereas LCFS will reduce the carbon intensity of diesel and gasoline transportation fuels. To account for GHG reductions achieved by Pavley, emissions generated by construction equipment and vehicles were calculated using adjusted emission factors from EMFAC2014.⁵

The RPS will increase the proportion of renewable energy supplied to the electrical grid. The emission factors summarized in Table 22B-17 are based on the statewide renewable energy mix in 2010 (14%). Implementation of the RPS will increase the proportion of renewable energy within the state to 33% by 2020. To account for emissions reductions achieved by increases in renewable energy, annual electricity emission factors were calculated assuming a linear increase in statewide renewables between 2010 and 2020. Because RPS requirements end in 2020, the percentage of renewable energy after 2020 was assumed to remain constant at 33%.

Electricity emissions with implementation of RPS were estimated by multiplying the expected annual electricity usage (Table 22B-17) by the emission factors shown in Table 22B-20. Note that implementation of the RPS will affect criteria pollutants, in addition to GHG emissions.

22A.1.11 Environmental Commitments to Reduce Criteria Pollutants, GHGs, and DPM

The lead agency has identified several environmental commitments to reduce construction-related criteria pollutants and GHG emissions, as described in Appendix 3B, *Environmental Commitments*. Emissions were quantified with implementation of the environmental commitments by making the following adjustments to the emissions analysis described in Sections 22A.1.1 through 22A.1.9:

⁵ EMFAC2014 does not include emissions reductions achieved by LCFS.

1. **Heavy-Duty Equipment:** CalEEMod and OFFROAD emission factors for heavy-duty equipment greater than 50 horsepower were replaced with model year 2013 emission factors obtained from the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Construction Mitigation Calculator. The 2013 model year emission factors for each equipment piece are built from the zero-hour emissions rates, annual deterioration rates, and assumptions about engine operating hours.
2. **Marine Vessels:** Model year 2000 marine vessel engines were replaced with model year 2010 emission factors (Tier 3 compliance for new engines) obtained from the ARB (2012), as shown in Table 22B-4.
3. **On-Road Haul Trucks:** Fleet average emission factors for heavy-duty diesel trucks were replaced with average emission factors for model year 2010 or newer vehicles obtained from EMFAC2014.
4. **Locomotives:** Tier 1 emission factors for locomotives were replaced with Tier 4 emission factors obtained from the ARB (2010), as shown in Table 22B-6.
5. **Earth Movement and Road Dust:** Uncontrolled emission factors for onsite soil disturbance and re-entrained road dust were reduced by 61% and 55%, respectively, pursuant to the Western Governors' Association Fugitive Dust Handbook (Countess Environmental 2006).
6. **Concrete Batching:** Uncontrolled emission factors for batching processes and active piles were reduced by 70% and 80%, respectively, pursuant to the SMAQMD's (2011) Concrete Batching Operations Policy Manual.

22A.1.12 Mitigation to Reduce GHG Emissions

Mitigation Measure AQ-21 requires developing and implementing a GHG mitigation program to completely offset (i.e., to net zero) construction-related GHG emissions through implementing emissions-reduction projects. The mitigation measure outlines 13 GHG-reduction strategies that will be used in formulating the GHG mitigation program. Potential GHG reductions associated with the strategies were evaluated to ensure the mitigation could offset GHG emissions from the BDCP alternatives to net zero.

A brief overview of the method and assumptions for each strategy is provided below. The reduction analysis was developed for informational purposes only and in many cases, only a high-level estimate was generated for offset validation. BDCP proponents will develop a mechanism for quantifying, funding, implementing, and verifying emissions reductions associated with the selected strategies and facility-specific technologies. BDCP proponents will also conduct annual reporting to verify and document that selected strategies achieve sufficient emissions reductions to offset construction-related emissions to net zero.

Strategy-1: Renewable Energy Purchase Agreement: Potential GHG reductions were not explicitly quantified; according to the National Renewable Energy Laboratory (2012), California's technical potential for utility-scale photovoltaics exceeds 246,000 gigawatt-hours, which far exceeds the construction energy demands for CM1 (2,132 gigawatt-hours over the entire construction period for Alternative 4). Assuming renewable energy would offset 50% of the construction electric demands yields an emissions reduction of approximately 231,000 metric tons CO₂e for Alternative 4.

Strategy-2: Engine Electrification: GHG reductions achieved by this strategy would depend on the number and type of equipment pieces ultimately electrified. While some electric engines are commercially available, it is currently unknown which specific equipment in the construction inventory may be electrified. Conservatively assuming only 1 to 5% of the equipment fleet would be electrified yields emissions reductions of approximately 8,000 to 41,000 metric tons CO₂e for Alternative 4.

Strategy-3: Low Carbon Concrete: According to Donovan and Pyle (n.d.), cement with supplementary cementitious materials (SCM) has a 29% lower total carbon footprint. As a high-level estimate, it was assumed that CM1 components would be constructed out of concrete with up to 70% replacement of cement with SCM. Potential GHG reductions were therefore quantified by multiplying estimated CO₂ emissions from concrete batching by 70% and then by 29%, resulting in an emissions reduction of approximately 500,000 metric tons CO₂ for Alternative 4.

Strategy-4: Renewable Diesel and/or Bio-diesel: According to the Department of Energy (DOE) (2008), B20 (20% biodiesel/ 80% petroleum diesel) can reduce CO₂ emissions by 15%. It was conservatively assumed that 50% of diesel-powered equipment would utilize B20 during construction. Potential GHG reductions were therefore quantified by multiplying estimated CO₂ emissions from diesel-powered equipment by 50% and then by 15%, resulting in an emissions reduction of approximately 60,000 metric tons CO₂ for Alternative 4.

Strategy-5: Residential Energy Efficiency Improvements: DOE's (2014) Home Energy Saver (HES) estimates that the retrofits outlined in Mitigation Measure AQ-21 would reduce CO₂ emissions by 5,152 pounds per package per year. There are 1.4 million homes (2008 est.) within the socioeconomic Study area (i.e., Delta Study area). As a high-level estimate, it was conservatively assumed that 50,000 of these homes would be retrofitted. Potential GHG reductions were therefore quantified by multiplying 50,000 retrofits by 5,152 pounds of CO₂ per retrofit per year, resulting in an emissions reduction of approximately 116,000 metric tons CO₂e per year. Total lifetime GHG reductions could reach 2.1 million metric tons CO₂e, assuming a retrofit lifetime of 18 years (California Energy Commission 2009).

Strategy-6: Commercial Energy Efficiency Improvements: According to the Energy Information Administration (2008), average commercial floorspace in the Pacific Region is approximately 28,000 square feet per building. As a high-level estimate, it was conservatively assumed that 10,000 commercial buildings in the Plan Area would be retrofitted to achieve a 15% reduction in building wide energy use. Electricity and natural gas reductions achieved by the retrofits were quantified assuming 15 kilowatt-hours and 0.28 therms are consumed per square foot, respectively (California Energy Commission 2006). The electricity and natural gas reductions were translated to GHG savings based on the emission factors presented in Table 22B-20, resulting in an emissions reduction of approximately 198,000 metric tons CO₂e per year. Total lifetime GHG reductions could reach 2.4 million metric tons CO₂e, assuming a retrofit lifetime of 18 years (California Energy Commission 2009).

Strategy-7: Residential Rooftop Solar: National Renewable Energy Laboratory (NERL) System Advisor Model (SAM) was used to calculate the energy potential of a typical residential solar installation in the Sacramento Valley.⁶ As a high-level estimate, it was conservatively assumed that 50,000 of homes would receive solar PV. Energy reductions were therefore quantified by

⁶ See *Final GHG Reduction Measure Analysis for the Sacramento Municipal Utility District* (ICF International 2011).

1 multiplying 50,000 systems by the estimated solar output per system (4,617 kWh). The resulting
 2 electricity reductions were translated to GHG savings based on the emission factors presented in
 3 Table 22B-20, resulting in an emissions reduction of approximately 49,000 metric tons CO₂e per
 4 year. Total lifetime GHG reductions could reach 1.2 million metric tons CO₂e assuming a PV lifetime
 5 of 25 years (U.S. Department of Energy 2013).

6 **Strategy-8: Commercial Rooftop Solar:** NERL's SAM was used to calculate the energy potential of a
 7 typical commercial solar installation in the Sacramento Valley. As a high-level estimate, it was
 8 conservatively assumed that 2,500 of commercial buildings would receive solar PV. Energy
 9 reductions were therefore quantified by multiplying 2,500 systems by the estimated solar output
 10 per system (304,152 kWh). The resulting electricity reductions were translated to GHG savings
 11 based on the emission factors presented in Table 22B-20, resulting in an emissions reduction of
 12 approximately 164,000 metric tons CO₂e per year. Total lifetime GHG reductions could reach 4.1
 13 million metric tons CO₂e assuming a PV lifetime of 25 years (U.S. Department of Energy 2013).

14 **Strategy-9: Purchase Carbon Offsets:** Potential GHG reductions were not explicitly quantified;
 15 according to the Legislative Analyst's Office (2012), it is estimated that between 2012 and 2020, 2.5
 16 billion allowances will be made available within the state, which far exceeds estimated construction
 17 emissions for all alternatives.

18 **Strategy-10: Development of Biomass Waste Digestion and Conversion Facilities:** Based on
 19 information provided by the CEC (Mariscal 2012), the technical potential for biomass feedstock
 20 production within 200 miles of the CM1 is approximately 122 MW per year. Potential electricity
 21 production (MWh) associated with this potential was calculate based on the energy generating
 22 potential (MWh/MW/year) of dairy farms (U.S Environmental Potential 2014b). The resulting
 23 electricity reductions were translated to GHG savings based on the emission factors presented in
 24 Table 22B-20. As a high-level estimate, it was conservatively assumed that only 10% of the technical
 25 potential would be captured, resulting in an emissions reduction of approximately 20,000 metric
 26 tons CO₂e per year. Total lifetime GHG reductions could reach 200,000 metric tons CO₂e assuming a
 27 digester lifetime of 10 years (Biogas Energy Inc. 2008).

28 **Strategy-11: Agriculture Waste Conversion Development:** Based on information provided by the
 29 CEC (Mariscal 2012), the technical potential for digestible biomass production within 200 miles of
 30 the CM1 is approximately 13 million bone-dry tons (BDT) per year. Potential electricity production
 31 (kWh) associated with this potential was calculate based on the energy generating potential
 32 (kWh/pound) of woody biomass (U.S. Forest Service et al. 2008). The resulting electricity reductions
 33 were translated to GHG savings based on the emission factors presented in Table 22B-20. As a high-
 34 level estimate, it was conservatively assumed that only 5% of the technical potential would be
 35 captured, resulting in an emissions reduction of approximately 196,000 metric tons CO₂e per year.
 36 Total lifetime GHG reductions could reach 3.9 million metric tons CO₂e assuming a system lifetime of
 37 20 years (United States Environmental Protection Agency 2008).

38 **Strategy-12: Temporarily Increase Renewable Energy Purchases for Operations:** Potential
 39 GHG reductions were not explicitly quantified; this strategy would purchase renewable electricity in
 40 excess of the quantity needed to meet DWR's GHG emissions reduction goals.

41 **Strategy-13: Tidal Wetland Inundation:** Given the variability associated with land use change and
 42 GHG flux, maximum emissions reductions associated with this strategy were not quantified.

22A.1.13 Emissions by Air District and Air Basin

The project cross three air basins—SFBAAB, SVAB, and SJVAB—and falls under the jurisdiction of four air districts—YSAQMD, SMAQMD, BAAQMD, and SJVAPCD. GIS was used to identify the location of all construction activities associated with the five conveyance options. Tables 22B-21 through 22B-25 in Appendix 22B, *Air Quality Assumptions*, summarize the air districts and air basins crossed by each major construction component. Several features cross multiple air districts or air basins. The proportion of activity within each air district and basin was based on the number of miles or acres constructed within each air district and basin. For example, 18 miles of tunnel in the modified pipeline/tunnel alignment will be constructed within Reach 4, of which 7 (40%) will be located within the SMAQMD and 11 (60%) will be located within the SJVAPCD (see Table 22B-21).

22A.2 Operation

22A.2.1 Maintenance Activities

22A.2.1.1 Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 (Pipeline/Tunnel Conveyance), Alternative 4 (Modified Pipeline/Tunnel Conveyance), Alternatives 1B, 2B, and 6B (West Alignment), and Alternatives 1C, 2C, and 6C (East Alignment)

Operations and maintenance (O&M) include both routine activities and yearly maintenance. Routine activities would occur on a daily basis throughout the year, whereas yearly maintenance would occur annually or every five years.

Routine Maintenance

DWR provided labor and equipment estimates for maintenance, management, repair, and operating crews. One of each crew type is required to cover daily O&M activities at all pumping plants and intakes. Table 22B-26 in Appendix 22B, *Air Quality Assumptions*, summarizes the number of employees, vehicles, and equipment included in each crew for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 6A, 6B, and 6C. Assumptions for all other alternatives were scaled based on the number of constructed intakes.⁷ Operational emissions associated with vehicle traffic and maintenance equipment were estimated using emission factors from the EMFAC2014 and CalEEMod models, respectively. Emissions were quantified for both the ELT (2025) and LLT (2060) periods. Key assumptions include:

- Employees would make two trips to the project site per day, 250 days per year.
- Employee vehicle roundtrips would be 42.2 miles, based on a geospatial analysis of employment densities and potential drive routes to the intake locations.
- Crew, foreman, and dump trucks would make a maximum of two trips per day.

⁷ Under Alternative 4, one of each crew type is also required for O&M activities at the combined pumping plant. Accordingly, at total of two of each crew type (one set at the intakes [scaled] and one set at the combined pumping plant) will be required.

- Crew, foreman, and dump truck roundtrips would be 30 miles, based on information provided by DWR and the assumption that 1) crew vehicle movement would occur onsite among various facilities and 2) hauled debris would be deposited at local landfill sites.
- All equipment except the welders, backhoes, and offroad trucks were conservatively assumed to operate a maximum of 8 hours per day, 250 days per year; welders, backhoes, and offroad trucks were assumed to occur 4 hours a day.

Yearly Maintenance

Yearly maintenance includes annual inspections, removal of sediment from sedimentation basins and drying lagoons, and half-decadal tunnel dewatering. Annual inspections include work on the fish screens, gate control structures, removal and inspection of pumps and motors, and inspection of tunnels by a remotely operated vehicle (ROV). Tunnel dewatering includes a physical inspection of the tunnel lining and shafts. Table 22B-27 in Appendix 22B, *Air Quality Assumptions*, summarizes the number of employees, vehicles, and equipment required for annual inspections and tunnel dewatering.

Operational emissions associated with vehicle traffic and maintenance equipment were estimated using emission factors from the EMFAC2011 and CalEEMod models, respectively. Emissions were quantified for both the ELT (2025) and LLT (2060) periods. Key assumptions include:

- Annual inspections would occur over a period of one month for the pipeline/tunnel and modified pipeline/tunnel alignments, two weeks for the west alignment, and one week for the east alignment. Work would occur five days per week.
- Sediment removal from the sedimentation basins and drying lagoons would occur over a period of one to two months for the pipeline/tunnel and modified pipeline/tunnel alignments⁸, one month for the west alignment, and two weeks for the east alignment. Work would occur five days per week.
- Tunnel dewatering inspections would occur over a period of two months for the pipeline/tunnel, modified pipeline/tunnel, and west alignments. Tunnel dewatering requires dewatering the full length of the tunnel and would take 30 days to complete, followed by sediment removal, liner cleaning, and inspection. The east alignment would not require tunnel dewatering maintenance.
- Each employee would make two trips to the project site per day according to the schedules identified above.
- Employee vehicle roundtrip would be 70 miles, based on information provided by DWR and the assumption that specialized crews from the Bay Area or Sacramento would need to travel to the Delta.
- Crew and dump trucks would make a maximum of two trips per day.
- Crew and dump truck roundtrips would be 30 miles, based on information provided by DWR and the assumption that 1) crew vehicle movement would occur onsite among various facilities and 2) hauled sediments would be deposited at local landfill sites.

⁸ Two months for alternatives with two tunnels; one month for alternatives with one tunnel

- All equipment except the cranes and loaders were conservatively assumed to operate a maximum of 8 hours per day; cranes, loaders, man-lifts, and water trucks were assumed to occur 4 hours a day.

22A.2.1.2 Alternative 9 (Separate Corridors)

Specific activity assumptions for Alternative 9 are not available. However, DWR provided a cost estimate for O&M associated with Alternative 9. Total costs for routine O&M were 26% of total costs for routine O&M for Alternative 1A. Zero cost was given for yearly maintenance. Based on this information, O&M emissions associated with Alternative 9 were assumed to be 26% of emissions quantified for Alternative 1A.

22A.2.2 SWP and CVP Pumping

Construction of the water conveyance facility would modify BDCP operations and cause the BDCP alternatives to have slightly different energy requirements within the ELT (2025) and LLT (2060) periods. Increases in annual electricity consumption for all alternatives relative to the No Action Alternative (CVP only) and existing conditions (SWP only) were calculated in Chapter 21, *Energy*, and is summarized in Table 22B-28 in Appendix 22B, *Air Quality Assumptions*. Generation of this additional electricity would result in criteria pollutant and GHG emissions at regional power plants. GHG emissions generated by increased SWP pumping were provided by DWR and are based on actual and forecasted GHG emissions rates for the SWP system. Statewide grid average emission factors (see Table 22B-20) were utilized for SWP criteria pollutant emissions analysis as criteria pollutant emission factors specific to the SWP system were unavailable. Indirect GHG and criteria pollutants generated by increased CVP pumping were also estimated using adjusted statewide grid average emission factors for state renewable energy mandates (see Table 22B-20).

22A.3 References

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Air Quality Assumptions

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1 **Table 22B-1. Construction Schedule**

Phase	Feature	Description	Start	End	Days
8002	Clifton Court Forebay	Mobilization	1/4/2024	1/18/2024	8
8003	Clifton Court Forebay	Contr. Mngmt., Supervision, Admin.	1/18/2024	3/8/2029	1,072
8004	Clifton Court Forebay	Access Construction	1/4/2024	3/1/2025	241
8005	Clifton Court Forebay	Temporary Facilities	1/4/2024	4/4/2025	261
8006	Clifton Court Forebay	Batch Plant	5/27/2024	3/8/2029	998
8007	Clifton Court Forebay	Temp Facility Operations	4/4/2025	3/8/2029	819
8010	Clifton Court Forebay	SCCF Dike - SW Corner	10/28/2024	1/21/2026	249
8012	Clifton Court Forebay	SCCF Dike - SE Corner	1/22/2026	4/19/2027	252
8015	Clifton Court Forebay	SCCF Dike - Gate to Dike	6/26/2024	9/25/2025	253
8025	Clifton Court Forebay	CCF Dredging	1/18/2024	3/14/2028	1,518
8030	Clifton Court Forebay	CCF Partition Dike	4/20/2027	10/23/2028	306
8040	Clifton Court Forebay	NCCF Dike - West Side	9/29/2025	12/22/2026	251
8045	Clifton Court Forebay	NCCF Dike - North Side	12/23/2026	3/21/2028	251
8050	Clifton Court Forebay	Relocate Byron Highway	1/2/2024	6/27/2024	102
8060	Clifton Court Forebay	Relocate Railroad	1/2/2024	6/25/2024	100
8071	Clifton Court Forebay	NCCF Siphon (Phase 1) Excavate	12/29/2023	10/1/2024	278
8073	Clifton Court Forebay	NCCF Siphon (Phase 1) Concrete	5/27/2024	1/9/2025	228
8075	Clifton Court Forebay	NCCF Siphon (Phase 1) Backfill	9/16/2024	2/3/2025	77
8077	Clifton Court Forebay	NCCF Siphon (Phase 2) Excavate	10/2/2024	6/14/2025	256
8079	Clifton Court Forebay	NCCF Siphon (Phase 2) Concrete	1/18/2025	9/3/2025	229
8081	Clifton Court Forebay	NCCF Siphon (Phase 2) Backfill	5/19/2025	9/29/2025	74
8090	Clifton Court Forebay	Byron Highway Bridge over Canal	10/2/2024	4/9/2025	108
8092	Clifton Court Forebay	SP Railroad Bridge over Canal	4/4/2025	10/13/2025	110
8096	Clifton Court Forebay	NCCF Outlet Canal	10/28/2024	4/30/2026	306
8101	Clifton Court Forebay	Control Structure # 1 Excavate	3/23/2026	9/21/2026	102
8103	Clifton Court Forebay	Control Structure # 1 Concrete	9/22/2026	6/17/2027	151
8111	Clifton Court Forebay	Control Structure # 2 Excavate	3/23/2026	9/30/2026	108
8113	Clifton Court Forebay	Control Structure # 2 Concrete	10/1/2026	7/8/2027	156
8121	Clifton Court Forebay	Control Structure # 3 Excavate	10/13/2027	4/18/2028	104
8123	Clifton Court Forebay	Control Structure # 3 Concrete	4/19/2028	1/29/2029	156
8131	Clifton Court Forebay	Control Structure # 4 Excavate	10/13/2027	4/18/2028	104
8133	Clifton Court Forebay	Control Structure # 4 Concrete	4/19/2028	3/8/2029	179
8140	Clifton Court Forebay	Old River Structure Excavate	10/1/2026	4/6/2027	104
8141	Clifton Court Forebay	Old River Structure Concrete	4/7/2027	1/10/2028	152
8145	Clifton Court Forebay	New Spillway Excavate	4/7/2027	10/12/2027	105
8146	Clifton Court Forebay	New Spillway Concrete	10/13/2027	7/13/2028	152
Feature	Clifton Court Forebay	Routine supply delivery for duration of const.	12/29/2023	3/8/2029	1,561
Onland	Geotechnical Explorations ^a	Onland geotechnical explorations	1/1/2016	9/15/2018	823
Overwater	Geotechnical Explorations ^a	Overwater geotechnical explorations	1/1/2016	9/15/2018	823
AccessRoad	Geotechnical Explorations ^a	Temporary access roads for exploration sites	1/1/2016	9/15/2018	823

Phase	Feature	Description	Start	End	Days
2	Intakes	Contractor Mobilization	11/1/2020	1/23/2021	48
3	Intakes	Contractor Staff	11/1/2020	8/5/2029	2285
4	Intakes	Erect Temp Contractor Facilities	12/1/2020	5/5/2021	90
5	Intakes	Operate Temp Facilities	1/1/2021	8/5/2029	2241
6	Intakes	Erect Batch Plant	12/6/2020	4/15/2021	76
7	Intakes	Operate Batch Plant	4/14/2021	4/11/2029	2086
501	Intakes	Intake 5 Construction Wharf	4/15/2021	8/13/2021	69
503	Intakes	Intake 5 Substation & Elect Distribution	4/4/2022	6/19/2022	44
505	Intakes	Intake 5 Initial Site Work	1/1/2021	6/16/2022	304
506	Intakes	Intake 5 SR 16 Bridge	4/14/2021	4/14/2022	104
507	Intakes	Intake 5 Cofferdam	4/14/2022	10/26/2022	140
509	Intakes	Intake 5 Final Site Work	8/2/2025	3/13/2026	160
511	Intakes	Intake 5 Ground Improvement	8/16/2022	1/30/2023	120
513	Intakes	Intake 5 Excavate Inside Cofferdam	1/7/2023	3/16/2023	40
515	Intakes	Intake 5 Drilled Piers	2/28/2023	11/19/2023	189
517	Intakes	Intake 5 Tremie Concrete	11/6/2023	12/10/2023	20
519	Intakes	Intake 5 Dewater Cofferdam	12/11/2023	1/28/2024	28
521	Intakes	Intake 5 Structure Concrete	1/27/2024	6/14/2025	288
523	Intakes	Intake 5 Gates	5/8/2025	7/2/2025	32
525	Intakes	Intake 5 Fish Screens	5/2/2024	7/9/2025	248
527	Intakes	Intake 5 MEP	5/12/2025	8/31/2025	64
529	Intakes	Intake 5 Finish Out	8/2/2025	10/10/2025	40
551	Intakes	Intake 5 Sed Basin Deep Wells	3/28/2022	5/31/2024	456
553	Intakes	Intake 5 Sed Basin Excavation	4/26/2022	6/11/2023	235
554	Intakes	Intake 5 Sed Basin Finish Grade & Pave	7/7/2023	8/31/2023	32
555	Intakes	Intake 5 Sed Basin Piles	1/1/2023	7/7/2023	108
557	Intakes	Intake 5 Sed Basin Concrete	2/1/2023	7/24/2024	309
559	Intakes	Intake 5 Sed Basin Gates	6/10/2024	9/29/2024	64
561	Intakes	Intake 5 Sed Basin MEP & Finish	9/1/2024	11/23/2024	48
301	Intakes	Intake 3 Construction Wharf	4/17/2023	8/13/2023	68
303	Intakes	Intake 3 Substation & Elect Distribution	4/12/2024	7/18/2024	56
305	Intakes	Intake 3 Initial Site Work	1/25/2023	4/16/2024	256
306	Intakes	Intake 3 SR 16 Bridge	4/17/2023	4/12/2024	104
307	Intakes	Intake 3 Cofferdam	4/16/2024	10/7/2024	125
309	Intakes	Intake 3 Final Site Work	2/20/2027	11/26/2027	160
311	Intakes	Intake 3 Ground Improvement	9/10/2024	3/31/2025	145
313	Intakes	Intake 3 Excavate Inside Cofferdam	2/9/2025	6/7/2025	68
315	Intakes	Intake 3 Drilled Piers	6/7/2025	11/21/2025	120
317	Intakes	Intake 3 Tremie Concrete	11/22/2025	1/2/2026	24
319	Intakes	Intake 3 Dewater Cofferdam	1/3/2026	2/27/2026	32
321	Intakes	Intake 3 Structure Concrete	2/28/2026	4/23/2027	240
323	Intakes	Intake 3 Gates	4/10/2027	5/28/2027	28
325	Intakes	Intake 3 Fish Screens	5/18/2026	5/30/2027	108
327	Intakes	Intake 3 MEP	5/29/2027	9/3/2027	56
329	Intakes	Intake 3 Finish Out	8/15/2027	10/23/2027	40

Phase	Feature	Description	Start	End	Days
351	Intakes	Intake 3 Sed Basin Deep Wells	4/15/2024	2/22/2027	597
353	Intakes	Intake 3 Sed Basin Excavation	4/16/2024	6/23/2025	124
354	Intakes	Intake 3 Sed Basin Finish Grade & Pave	6/26/2025	10/8/2025	60
355	Intakes	Intake 3 Sed Basin Piles	2/28/2025	9/4/2025	108
357	Intakes	Intake 3 Sed Basin Concrete	8/8/2025	11/19/2026	268
359	Intakes	Intake 3 Sed Basin Gates	10/3/2026	1/22/2027	64
361	Intakes	Intake 3 Sed Basin MEP & Finish	1/23/2027	4/16/2027	48
365	Intakes	Intake 3 Conveyance to Junction Structure	4/10/2026	6/3/2027	240
367	Intakes	Intake 3 Concrete Junction Structure	7/29/2026	3/30/2027	140
369	Intakes	Intake 3 Junction Structure MEP	10/25/2026	4/17/2027	100
371	Intakes	Intake 3 Junction Structure Final Finish & Cleanup	3/27/2027	6/4/2027	40
201	Intakes	Intake 2 Construction Wharf	12/14/2024	4/10/2025	68
203	Intakes	Intake 2 Substation & Elect Distribution	12/7/2025	2/22/2026	44
205	Intakes	Intake 2 Initial Site Work	9/25/2024	3/9/2026	303
206	Intakes	Intake 2 SR 16 Bridge	12/13/2024	12/12/2025	104
207	Intakes	Intake 2 Cofferdam	12/14/2025	7/16/2026	154
209	Intakes	Intake 2 Final Site Work	11/1/2028	8/5/2029	158
211	Intakes	Intake 2 Ground Improvement	5/20/2026	11/6/2026	123
213	Intakes	Intake 2 Excavate Inside Cofferdam	10/28/2026	1/8/2027	42
215	Intakes	Intake 2 Drilled Piers	12/25/2026	9/15/2027	189
217	Intakes	Intake 2 Tremie Concrete	9/2/2027	10/5/2027	19
219	Intakes	Intake 2 Dewater Cofferdam	10/6/2027	11/26/2027	30
221	Intakes	Intake 2 Structure Concrete	11/27/2027	4/11/2029	287
223	Intakes	Intake 2 Gates	3/8/2029	5/1/2029	31
225	Intakes	Intake 2 Fish Screens	3/3/2028	5/5/2029	244
227	Intakes	Intake 2 MEP	3/9/2029	6/28/2029	64
229	Intakes	Intake 2 Finish Out	5/16/2029	7/24/2029	40
251	Intakes	Intake 2 Sed Basin Deep Wells	8/1/2026	1/21/2029	516
253	Intakes	Intake 2 Sed Basin Excavation	9/12/2026	11/28/2027	252
254	Intakes	Intake 2 Sed Basin Finish Grade & Pave	11/28/2027	3/10/2028	60
255	Intakes	Intake 2 Sed Basin Piles	7/15/2027	1/22/2028	109
257	Intakes	Intake 2 Sed Basin Concrete	8/15/2027	10/28/2028	252
259	Intakes	Intake 2 Sed Basin Gates	9/5/2028	12/25/2028	64
261	Intakes	Intake 2 Sed Basin MEP & Finish	10/29/2028	1/22/2029	49
Feature	Intakes	Routine supply delivery for duration of const.	11/1/2020	8/5/2029	2285
7002	Intermediate Forebay	Mobilization	7/1/2024	8/1/2024	65
7003	Intermediate Forebay	Contr. Mngmt., Supervision, Admin.	7/1/2024	7/11/2029	1,300
7004	Intermediate Forebay	Access Construction	7/15/2024	11/15/2024	84
7005	Intermediate Forebay	Temporary Facilities	8/1/2024	12/30/2024	52
7006	Intermediate Forebay	Batch Plant	4/13/2028	3/23/2029	260
7007	Intermediate Forebay	Temp Facility Operations	7/1/2024	7/11/2029	1,300
7010	Intermediate Forebay	Intermediate Forebay Earthworks	7/1/2024	12/25/2027	650

Phase	Feature	Description	Start	End	Days
7022	Intermediate Forebay	Intermediate Forebay Inlet Ground Improvements	1/14/2027	10/12/2028	195
7020	Intermediate Forebay	Intermediate Forebay Inlet Sitework	10/14/2027	4/12/2028	130
7035	Intermediate Forebay	Intermediate Forebay Inlet Concrete	4/13/2028	4/11/2029	260
7040	Intermediate Forebay	Intermediate Forebay Inlet Gates	1/11/2029	7/11/2029	130
7045	Intermediate Forebay	Intermediate Forebay Inlet Mech & Elect	4/12/2029	7/11/2029	65
7052	Intermediate Forebay	Outlet Ground Improvements	12/28/2026	9/23/2028	195
7050	Intermediate Forebay	Intermediate Forebay Outlet Sitework	9/27/2027	3/24/2028	130
7065	Intermediate Forebay	Intermediate Forebay Outlet Concrete	3/27/2028	3/23/2029	260
7070	Intermediate Forebay	Intermediate Forebay Outlet Gates	12/25/2028	6/22/2029	130
7075	Intermediate Forebay	Intermediate Forebay Outlet Mech & Elect	3/26/2029	6/22/2029	65
Feature	Intermediate Forebay	Routine supply delivery for duration of const.	7/1/2024	7/11/2029	1,300
9999	Permeant Power	Repurposing Temporary Lines to Permeant	1/1/2027	6/30/2027	128
7505	Reach 7/Combined Pump Plant	Mobilization	1/2/2018	3/26/2018	60
7507	Reach 7/Combined Pump Plant	Contractor's Site Staff-Surface Tunnel Support	1/2/2018	7/29/2024	1,715
7508	Reach 7/Combined Pump Plant	Contractor's Site Staff-Pump Plants	12/3/2026	12/25/2028	540
7510	Reach 7/Combined Pump Plant	Access Construction	2/5/2018	5/20/2018	60
7512	Reach 7/Combined Pump Plant	Temporary Facility Construction	3/5/2018	8/12/2018	92
7516	Reach 7/Combined Pump Plant	Batch Plant Operation	9/10/2018	9/15/2028	2,092
7517	Reach 7/Combined Pump Plant	Temporary Facility Ops- Surface Tunnel Support	2/1/2018	7/29/2024	1,695
7518	Reach 7/Combined Pump Plant	Temporary Facility Ops-Pump Plant	12/3/2026	12/25/2028	540
7520	Reach 7/Combined Pump Plant	Clifton Court Cofferdam	5/20/2018	9/8/2018	64
7522	Reach 7/Combined Pump Plant	Old River Wharf	8/13/2018	12/16/2018	72
7530	Reach 7/Combined Pump Plant	Initial Earthwork	5/21/2018	10/21/2018	88
7535	Reach 7/Combined Pump Plant	Complete Embankment to El. 25	12/27/2027	6/4/2028	92
7540	Reach 7/Combined Pump Plant	Final Site Work	6/4/2028	12/30/2028	120
7600	Reach 7/Combined Pump Plant	East and West Tunnel Completion Dates	12/3/2026	3/4/2027	52
7705	Reach 7/Combined Pump Plant	West Pump Shaft Slab Concrete @ El -50	3/5/2027	4/29/2027	32
7710	Reach 7/Combined Pump Plant	West Pump Shaft Wall Concrete Below Op Deck	4/30/2027	10/7/2027	92
7715	Reach 7/Combined Pump Plant	West Pump Shaft Operating Deck Concrete	9/14/2027	12/27/2027	60
7725	Reach 7/Combined Pump Plant	West Pump Shaft Pumps & Operators	6/9/2028	10/26/2028	80

Phase	Feature	Description	Start	End	Days
7730	Reach 7/Combined Pump Plant	W Pump Plant Pipe to Discharge Splash Area	12/27/2027	4/9/2028	60
7760	Reach 7/Combined Pump Plant	East Pump Shaft Slab Concrete @ El. -50	12/3/2026	1/27/2027	32
7765	Reach 7/Combined Pump Plant	East Pump Shaft Wall Concrete Below Op Deck	1/27/2027	7/6/2027	92
7770	Reach 7/Combined Pump Plant	East Pump Shaft Operating Deck Concrete	5/1/2027	8/13/2027	60
7780	Reach 7/Combined Pump Plant	East Pump Shaft Pumps & Operators	3/1/2028	7/18/2028	80
7785	Reach 7/Combined Pump Plant	E Pump Plant Pipe to Discharge Splash Basin	7/22/2027	11/3/2027	60
7810	Reach 7/Combined Pump Plant	Pump Plants Surge Channel & Splash Basin	5/13/2027	12/8/2027	120
7820	Reach 7/Combined Pump Plant	Excavation & Piling for Splash Basin	3/4/2027	5/12/2027	40
7830	Reach 7/Combined Pump Plant	Backfill Splash Basin	12/8/2027	1/11/2028	20
7850	Reach 7/Combined Pump Plant	Pump Plant Construction Plant Operation	10/22/2026	4/8/2028	304
7905	Reach 7/Combined Pump Plant	West Pump Plant Walls above Op Deck	12/27/2027	5/14/2028	80
7907	Reach 7/Combined Pump Plant	East Pump Plant Walls above Op Deck	8/13/2027	12/30/2027	80
7910	Reach 7/Combined Pump Plant	West Pump Plant Overhead Crane	4/8/2028	6/9/2028	36
7912	Reach 7/Combined Pump Plant	East Pump Plant Overhead Crane	12/30/2027	3/1/2028	36
7915	Reach 7/Combined Pump Plant	West Pump Plant Roof	4/8/2028	5/26/2028	28
7917	Reach 7/Combined Pump Plant	East Pump Plant Roof	12/30/2027	2/16/2028	28
7920	Reach 7/Combined Pump Plant	West Pump Plant Finish Out	9/26/2028	12/25/2028	52
7922	Reach 7/Combined Pump Plant	East Pump Plant Finish Out	6/19/2028	9/17/2028	52
7925	Reach 7/Combined Pump Plant	Pump Plant MCC/Electrical Buildings (2 ea)	6/4/2028	9/30/2028	68
7930	Reach 7/Combined Pump Plant	Pump Plant Substation & Electrical Distribution	8/4/2028	11/30/2028	68
7935	Reach 7/Combined Pump Plant	Pump Plants Drywell Access Bldgs & Finish	7/1/2028	11/17/2028	80
7940	Reach 7/Combined Pump Plant	Pump Plants Water Treatment Facility	7/17/2028	12/3/2028	80
1010	Reach 7/Combined Pump Plant	TunnelMob Concurrent With Surface Activit	1/2/2019	1/31/2019	22
1020	Reach 7/Combined Pump Plant	Setup East Pump Plant	2/1/2019	2/14/2019	10
1030	Reach 7/Combined Pump Plant	Slurry Wall Installation	9/10/2018	3/14/2019	130

Phase	Feature	Description	Start	End	Days
1040	Reach 7/Combined Pump Plant	Excavate East Wet Well	5/9/2019	8/26/2019	76
1050	Reach 7/Combined Pump Plant	Tie Rebar Tremie Slab	8/27/2019	9/3/2019	6
1060	Reach 7/Combined Pump Plant	Setup & place tremie Slab	9/4/2019	9/10/2019	4
1070	Reach 7/Combined Pump Plant	Pump Water From Shaft	9/11/2019	9/13/2019	3
1080	Reach 7/Combined Pump Plant	Cure Time Tremie Slab	9/16/2019	9/24/2019	7
1090	Reach 7/Combined Pump Plant	Tie Rebar Work Slab	9/25/2019	10/2/2019	6
1100	Reach 7/Combined Pump Plant	Setup & Place Work Slab	10/3/2019	10/3/2019	1
1110	Reach 7/Combined Pump Plant	Tie Rebar Thrust Ring	10/4/2019	10/21/2019	12
1120	Reach 7/Combined Pump Plant	Set breakout forms & assemble Wall Foms	10/22/2019	10/25/2019	4
1130	Reach 7/Combined Pump Plant	Form Thrust Ring	10/28/2019	11/7/2019	9
1140	Reach 7/Combined Pump Plant	Jet Grout Anular Ring	3/15/2019	5/8/2019	39
1150	Reach 7/Combined Pump Plant	Asemble East TBM	11/21/2019	3/13/2020	78
1160	Reach 7/Combined Pump Plant	Place Thrust Ring	11/8/2019	11/20/2019	9
1170	Reach 7/Combined Pump Plant	Order & Manufacture East TBM	1/2/2018	6/28/2019	380
1180	Reach 7/Combined Pump Plant	Order & Manufcture West TBM	4/5/2018	10/2/2019	380
1280	Reach 7/Combined Pump Plant	Excavate East Tunnel	3/16/2020	4/2/2025	1,283
1290	Reach 7/Combined Pump Plant	E Pump Plant Set & Strip Elbow forms	4/20/2026	4/30/2026	9
1300	Reach 7/Combined Pump Plant	Tie Rebar	5/1/2026	5/11/2026	7
1320	Reach 7/Combined Pump Plant	Set & Strip Shaft Forms	5/12/2026	5/25/2026	10
1330	Reach 7/Combined Pump Plant	Place wet well shaft Concrete	5/26/2026	7/14/2026	34
1340	Reach 7/Combined Pump Plant	Excavate Pump Plant Annular Ring	8/6/2026	9/23/2026	34
1350	Reach 7/Combined Pump Plant	Pump Plant Wall Rebar Below EL -2	9/24/2026	10/21/2026	20
1360	Reach 7/Combined Pump Plant	Assemble Pump Plant Wall Forms	10/22/2026	10/28/2026	5
1370	Reach 7/Combined Pump Plant	Set & Strip Pump Plant Wall Forms	10/29/2026	11/13/2026	12
1380	Reach 7/Combined Pump Plant	Place Pump Wall Concrete	11/16/2026	12/2/2026	12

Phase	Feature	Description	Start	End	Days
1390	Reach 7/Combined Pump Plant	Muck Disposal CONVEYOR SET UP	2/1/2019	3/25/2019	36
1480	Reach 7/Combined Pump Plant	Backfill Around Wet Well	7/15/2026	8/5/2026	16
1510	Reach 7/Combined Pump Plant	Setup West Pump Plant	2/1/2019	2/14/2019	10
1520	Reach 7/Combined Pump Plant	Slurry Wall Installation	12/10/2018	7/31/2019	130
1530	Reach 7/Combined Pump Plant	Jet Grout Anular Ring	8/1/2019	9/25/2019	39
1540	Reach 7/Combined Pump Plant	Excavate West Wet Well	9/26/2019	1/14/2020	76
1550	Reach 7/Combined Pump Plant	Tie Rebar Tremie Slab	1/15/2020	1/22/2020	6
1560	Reach 7/Combined Pump Plant	Setup & place tremie Slab	1/23/2020	1/28/2020	4
1570	Reach 7/Combined Pump Plant	Pump Water From Shaft	1/29/2020	1/31/2020	3
1580	Reach 7/Combined Pump Plant	Cure Time Tremie Slab	2/3/2020	2/11/2020	7
1590	Reach 7/Combined Pump Plant	Tie Rebar Work Slab	2/12/2020	2/20/2020	6
1600	Reach 7/Combined Pump Plant	Setup & Place Work Slab	2/21/2020	2/21/2020	1
1610	Reach 7/Combined Pump Plant	Tie Rebar Thrust Ring	2/24/2020	3/10/2020	12
1620	Reach 7/Combined Pump Plant	Set breakout forms & assemble Wall Foms	3/11/2020	3/16/2020	4
1630	Reach 7/Combined Pump Plant	Form Thrust Ring	3/17/2020	3/27/2020	9
1640	Reach 7/Combined Pump Plant	Place Thrust Ring	3/30/2020	4/9/2020	9
1650	Reach 7/Combined Pump Plant	Assemble West TBM	4/10/2020	7/30/2020	78
1660	Reach 7/Combined Pump Plant	W. Pump Plant Set & Strip Elbow Forms	8/26/2026	9/8/2026	9
1670	Reach 7/Combined Pump Plant	Tie Rebar	9/9/2026	9/17/2026	7
1690	Reach 7/Combined Pump Plant	Set & Strip Shaft Forms	9/18/2026	9/30/2026	9
1700	Reach 7/Combined Pump Plant	Place wet well shaft Concrete	10/1/2026	10/12/2026	8
1710	Reach 7/Combined Pump Plant	Excavate Pump Plant Annular Ring	11/4/2026	12/22/2026	34
1720	Reach 7/Combined Pump Plant	Pump Plant Wall Rebar Below EL -2	12/23/2026	1/20/2027	19
1730	Reach 7/Combined Pump Plant	Assemble Pump Plant Wall Forms	1/21/2027	1/27/2027	5
1740	Reach 7/Combined Pump Plant	Set & Strip Pump Plant Wall Forms	1/28/2027	2/12/2027	12

Phase	Feature	Description	Start	End	Days
1750	Reach 7/Combined Pump Plant	Place Pump Wall Concrete	2/15/2027	3/3/2027	12
1880	Reach 7/Combined Pump Plant	Excavate West Tunnel	7/31/2020	8/11/2025	1,277
1890	Reach 7/Combined Pump Plant	West TBM Conveyor, Grout, Utilities & Cle	8/12/2025	8/25/2026	264
1970	Reach 7/Combined Pump Plant	Slurry Wall East Access Shaft	3/18/2019	4/11/2019	16
1980	Reach 7/Combined Pump Plant	Excavate & Support East Access Shaft	4/12/2019	4/24/2019	9
1990	Reach 7/Combined Pump Plant	Excavate & Support East Access Tunnel	4/25/2019	5/1/2019	5
2000	Reach 7/Combined Pump Plant	Line East Access Tunnel & Shaft	5/2/2019	6/7/2019	26
2010	Reach 7/Combined Pump Plant	Operate Muck Disposal Area	3/26/2019	9/8/2025	1,640
2020	Reach 7/Combined Pump Plant	Slurry Wall West Access Shaft	8/1/2019	8/28/2019	16
2021	Reach 7/Combined Pump Plant	Excavate & Support West Access Shaft	8/29/2019	9/11/2019	9
2022	Reach 7/Combined Pump Plant	Excavate & Support West Access Tunnel	9/12/2019	9/18/2019	5
2023	Reach 7/Combined Pump Plant	Line West Access Tunnel & Shaft	9/19/2019	10/24/2019	26
2030	Reach 7/Combined Pump Plant	Operate Tunnel Water Treatment Plant	2/1/2019	3/2/2027	2,051
2033	Reach 7/Combined Pump Plant	E&W Intervention Grout Zone #1	9/26/2019	1/24/2020	84
2040	Reach 7/Combined Pump Plant	Indirects Tunnel & Shaft	3/12/2019	3/4/2027	2,027
2043	Reach 7/Combined Pump Plant	E&W Site, Grout & Slurry Wall Safe Haven	1/27/2020	10/28/2020	155
2053	Reach 7/Combined Pump Plant	East Excavate Safe Haven Shaft #1	10/29/2020	12/21/2020	37
2060	Reach 7/Combined Pump Plant	Excavate & Berm Muck Disposal Area	7/30/2018	12/27/2018	85
2063	Reach 7/Combined Pump Plant	East Concrete Safe Haven Shaft #1	12/22/2020	2/4/2021	31
2070	Reach 7/Combined Pump Plant	Final Dress & Cleanup Muck Disposal Area	9/9/2025	3/9/2026	100
2073	Reach 7/Combined Pump Plant	East Backfill Safe Haven Shaft #1	6/10/2021	7/9/2021	21
2083	Reach 7/Combined Pump Plant	West Excavate Safe Haven Shaft #1	12/22/2020	2/12/2021	37
2090	Reach 7/Combined Pump Plant	Backfill around Wet Well Shaft	10/13/2026	11/3/2026	16
2093	Reach 7/Combined Pump Plant	West Concrete Safe Haven Shaft # 1	2/15/2021	3/30/2021	31
2100	Reach 7/Combined Pump Plant	Turn Over To East Pump Plant Crew	12/3/2026	12/3/2026	1

Phase	Feature	Description	Start	End	Days
2103	Reach 7/Combined Pump Plant	West Safe Haven Shaft #1Backfill	6/1/2021	6/29/2021	21
2110	Reach 7/Combined Pump Plant	East TBM, Grout, Conveyor, Utilities & Cl	4/3/2025	4/17/2026	265
2113	Reach 7/Combined Pump Plant	E&W Restore Safe Haven Shaft #1	7/12/2021	8/17/2021	22
2120	Reach 7/Combined Pump Plant	Turn Over To West Pump Plant Crew	3/4/2027	3/4/2027	1
2123	Reach 7/Combined Pump Plant	E&W Intervention Grout Zone # 2	10/29/2020	3/2/2021	85
2133	Reach 7/Combined Pump Plant	E&W Site, Grout, & Slurry Wall Safe Have	3/3/2021	10/8/2021	155
2143	Reach 7/Combined Pump Plant	East Safe Haven #2 Shaft Excavate	10/11/2021	12/20/2021	50
2153	Reach 7/Combined Pump Plant	East Safe Haven Shaft #2 Concrete	12/21/2021	2/3/2022	31
2173	Reach 7/Combined Pump Plant	West Safe Haven Shaft #2 Excavate	12/21/2021	3/3/2022	50
2183	Reach 7/Combined Pump Plant	West Safe Haven Shaft #2 Concrete	3/4/2022	4/15/2022	31
2213	Reach 7/Combined Pump Plant	E&W Intervention Grout Zone #3	10/11/2021	2/14/2022	88
2253	Reach 7/Combined Pump Plant	East Backfill Safe Haven Shaft #2	8/19/2022	9/19/2022	21
2283	Reach 7/Combined Pump Plant	West Backfill Safe Haven Shaft # 2	1/7/2023	1/31/2023	21
2303	Reach 7/Combined Pump Plant	E&W Intervention Grout Zone # 4	2/15/2022	6/15/2022	85
2313	Reach 7/Combined Pump Plant	E&W Site, Grout & Slurry Wall Recovery S	10/17/2022	7/31/2023	200
2323	Reach 7/Combined Pump Plant	East Excavate Reception Shaft	8/1/2023	12/22/2023	102
2333	Reach 7/Combined Pump Plant	East Recovery Shaft Concrete	12/26/2023	3/5/2024	49
2343	Reach 7/Combined Pump Plant	West Recovery Excavate Shaft	12/26/2023	5/17/2024	102
2353	Reach 7/Combined Pump Plant	West Recovery Concrete	5/20/2024	7/29/2024	49
2363	Reach 7/Combined Pump Plant	E&W Intervention Grout Zone #5	6/16/2022	10/14/2022	85
Feature	Reach 7/Combined Pump Plant	Routine supply delivery for duration of const.	1/2/2018	12/30/2028	2,878
1010	Reach 4	Tunnel Mob Concurrent With Surface Activi	10/9/2019	11/7/2019	22
1020	Reach 4	Setup East Launch Shaft Sta 0+00	11/8/2019	11/21/2019	10
1030	Reach 4	East Slurry Wall Installation	8/6/2019	11/21/2019	77
1040	Reach 4	Excavate East Launch Shaft	2/26/2020	6/25/2020	86
1050	Reach 4	East Tie Rebar Tremie Slab	6/26/2020	7/10/2020	10
1060	Reach 4	East Setup & place tremie Slab	7/13/2020	7/20/2020	6
1070	Reach 4	East Pump Water From Shaft	7/30/2020	8/3/2020	3
1080	Reach 4	East Cure Time Tremie Slab	7/21/2020	7/29/2020	7

Phase	Feature	Description	Start	End	Days
1100	Reach 4	East Setup & Place Work Slab	8/4/2020	8/4/2020	1
1110	Reach 4	East Tie Rebar Thrust Ring	8/5/2020	9/2/2020	21
1120	Reach 4	East Set breakout forms	9/3/2020	9/4/2020	2
1130	Reach 4	East Form Thrust Ring	9/11/2020	9/24/2020	10
1140	Reach 4	East Jet Gout Break in Break out Blocks	11/22/2019	2/25/2020	64
1160	Reach 4	East Place Thrust Ring	9/25/2020	10/5/2020	7
1170	Reach 4	Setup For West Launch Shaft Sta 0+00	6/15/2020	6/26/2020	10
1180	Reach 4	West Slurry Wall Installation	11/22/2019	3/13/2020	77
1190	Reach 4	Excavate West Launch Shaft	6/29/2020	10/28/2020	86
1200	Reach 4	West Jet Grout Break in Break out Blocks	3/16/2020	6/12/2020	64
1210	Reach 4	West Tie rebar Tremie Slab	10/29/2020	11/11/2020	10
1220	Reach 4	West Setup & Place Tremie Slab	11/12/2020	11/19/2020	6
1230	Reach 4	West Tie Rebar Thrust Ring	12/8/2020	1/7/2021	21
1240	Reach 4	West Breakout Rng Forms	1/8/2021	1/11/2021	2
1250	Reach 4	West Assemble Thrust Ring Forms	1/12/2021	1/14/2021	3
1260	Reach 4	West Set & Strip Thrust Ring Forms	1/15/2021	1/28/2021	10
1270	Reach 4	West Place Thrust Ring Concrete	1/29/2021	2/8/2021	7
1280	Reach 4	Excavate East Tunnel	1/27/2021	9/4/2026	1,425
1290	Reach 4	West Pump Water From Shaft	12/2/2020	12/4/2020	3
1300	Reach 4	West Cure Time Tremie Slab	11/20/2020	12/1/2020	7
1310	Reach 4	East Assemble Thrust Ring Forms	9/8/2020	9/10/2020	3
1320	Reach 4	West Working Slab	12/7/2020	12/7/2020	1
1330	Reach 4	East Launch Shaft Backfill & Line	7/20/2027	11/16/2027	85
1340	Reach 4	West Launch Shaft Backfill & Line	5/23/2028	9/21/2028	85
1390	Reach 4	Muck Disposal Conveyor Set Up	11/8/2019	12/31/2019	36
1650	Reach 4	Assemble West TBM	2/9/2021	5/28/2021	78
1660	Reach 4	Assemble East TBM	10/6/2020	1/26/2021	78
1880	Reach 4	Excavate West Tunnel	6/1/2021	1/11/2027	1,425
1890	Reach 4	West Rem TBM Conveyor,Utilities, Grout &	7/13/2027	5/22/2028	220
2010	Reach 4	Operate Muck Disposal Area	1/2/2020	1/22/2027	1,793
2030	Reach 4	Operate Tunnel Water Treatment Plant	11/8/2019	3/21/2028	2,123
2033	Reach 4	E&W Intervention Grout Zones Sta 48+33	6/15/2020	10/16/2020	88
2040	Reach 4	Indirects Tunnel & Shaft	11/11/2019	3/23/2028	2,124
2043	Reach 4	EW Grout / Slury Wall Safe Haven Shaft S	10/19/2020	5/27/2021	155
2050	Reach 4	Set up Docks, Berm & Work Site	11/6/2018	11/7/2019	256
2053	Reach 4	East Excavate Safe Haven Shaft Sta 96+66	5/28/2021	7/15/2021	33
2060	Reach 4	Excavate & Berm Muck Disposal Area	6/11/2019	11/7/2019	85
2063	Reach 4	East Concrete Safe Haven Shaft Sta 96+66	7/16/2021	9/21/2021	47
2070	Reach 4	Final Dress & Cleanup Muck Disposal Area	8/9/2027	2/3/2028	100
2073	Reach 4	East Backfill Safe Haven Shaft Sta 96+66	7/25/2022	8/17/2022	18
2080	Reach 4	Batch Plant Operations	11/8/2019	9/11/2028	2,244
2083	Reach 4	West Excavate Safe Haven Shaft Sta 96+66	7/16/2021	8/31/2021	33
2093	Reach 4	West Concrete Safe Haven Shaft Sta 96+66	9/1/2021	11/5/2021	47
2110	Reach 4	East Rem TBM Conveyor,Utilities, Grout &	9/8/2026	7/19/2027	219
2113	Reach 4	E&W Restore Safe Haven Shaft Sta 96+66	12/21/2022	4/10/2023	60

Phase	Feature	Description	Start	End	Days
2123	Reach 4	E&W Intervention Grout Zone Sta 148+50 +	5/28/2021	10/1/2021	88
2193	Reach 4	West Safe Haven Backfill Sta 252+18	11/8/2024	12/4/2024	18
2203	Reach 4	E&W Safe Haven Restoration Sta 252+18	12/5/2024	4/10/2025	70
2213	Reach 4	E&W Intervention Grout Zone Sta 200+34	5/13/2022	9/16/2022	88
2233	Reach 4	E&W Grout / Slurry Wall Safe Haven Sta 2	10/4/2021	5/12/2022	155
2243	Reach 4	East Excavate Safe Haven w/ Shaft Sta 25	5/13/2022	6/29/2022	33
2253	Reach 4	West Excavate Safe Haven W/ Shaft Sta 2	6/30/2022	8/16/2022	33
2263	Reach 4	East Safe Haven W/ Shaft Conc Sta 252+18	6/30/2022	9/5/2022	47
2273	Reach 4	West Safe Haven W/ Shaft Conc Sta 252+18	8/17/2022	10/21/2022	47
2283	Reach 4	East Safe Haven Backfill Sta 252+18	7/9/2024	8/1/2024	18
2293	Reach 4	West Backfill Safe Haven Shaft Sta 96+66	11/24/2022	12/20/2022	18
2303	Reach 4	E&W Intervention Grout Zone Sta 309+22	9/19/2022	1/23/2023	88
2313	Reach 4	E/W Complete Recovery Shaft Area	12/28/2027	4/5/2028	70
2323	Reach 4	E&W Intervention Grout Zone Sta 425+38	5/29/2023	10/2/2023	88
2333	Reach 4	East Recovery Shaft Liner Concrete & Ba	10/5/2026	2/22/2027	97
2343	Reach 4	E&W Intervention Grout Zone Sta 366+20	1/24/2023	5/26/2023	88
2353	Reach 4	West Recovery Shaft Liner Concrete & Bac	8/10/2027	12/27/2027	97
Feature	Reach 4	Routine supply delivery for duration of const.	11/6/2018	9/21/2028	2,462
1010	Reach 5	Tunnel Mob Concurrent With Surface Activi	1/27/2021	2/26/2021	22
1015	Reach 5	Grout/Slurry Wall E/W Recovery Shafts St	11/5/2020	3/12/2021	88
1030	Reach 5	Set Up East Recovery Shaft	3/15/2021	3/26/2021	10
1040	Reach 5	Excavate East Recovery Shaft	3/29/2021	6/24/2021	63
1050	Reach 5	East Tie Rebar Tremie Slab	6/25/2021	7/9/2021	10
1060	Reach 5	East Setup & place tremie Slab	7/12/2021	7/19/2021	6
1070	Reach 5	East Pump Water From Shaft	7/29/2021	8/2/2021	3
1080	Reach 5	East Cure Time Tremie Slab	7/20/2021	7/28/2021	7
1100	Reach 5	East Setup & Place Work Slab	8/3/2021	8/3/2021	1
1110	Reach 5	East Tie Rebar Thrust Ring	8/4/2021	9/7/2021	24
1120	Reach 5	East Set breakout forms	9/8/2021	9/9/2021	2
1130	Reach 5	East Form Thrust Ring	9/15/2021	9/28/2021	10
1160	Reach 5	East Place Thrust Ring	9/29/2021	10/7/2021	7
1170	Reach 5	Setup For West Recovery Shaft	6/25/2021	7/9/2021	10
1190	Reach 5	Excavate West Recovery Shaft	7/12/2021	10/7/2021	63
1210	Reach 5	West Tie rebar Tremi Slab	10/8/2021	10/21/2021	10
1220	Reach 5	West Setup & Place Tremi Slab	10/22/2021	10/29/2021	6
1230	Reach 5	West Tie Rebar Thrust Ring	11/16/2021	12/20/2021	24
1240	Reach 5	West Breakout Rng Forms	12/21/2021	12/22/2021	2
1250	Reach 5	West Assemble Thrust Ring Forms	12/23/2021	12/28/2021	3
1260	Reach 5	West Set & Strip Thrust Ring Forms	12/29/2021	1/12/2022	10
1270	Reach 5	West Place Thrust Ring Concrete	1/13/2022	1/21/2022	7
1280	Reach 5	Excavate East Tunnel	2/11/2022	11/8/2024	698
1290	Reach 5	West Pump Water From Shaft	11/10/2021	11/12/2021	3
1300	Reach 5	West Cure Time Tremie Slab	11/1/2021	11/9/2021	7
1310	Reach 5	East Assemble Thrust Ring Forms	9/10/2021	9/14/2021	3

Phase	Feature	Description	Start	End	Days
1320	Reach 5	West Working Slab	11/15/2021	11/15/2021	1
1390	Reach 5	Muck Disposal Conveyor Set Up	3/11/2021	4/29/2021	36
1650	Reach 5	Assemble West TBM	2/11/2022	6/15/2022	87
1660	Reach 5	Assemble East TBM	10/8/2021	2/10/2022	87
1880	Reach 5	Excavate West Tunnel	6/16/2022	3/20/2025	701
1890	Reach 5	W Remove TBM Conveyor, Utilities, Grout &	3/21/2025	8/18/2025	105
2010	Reach 5	Operate Muck Disposal Area	4/30/2021	4/11/2025	1,003
2020	Reach 5	Operate Batch Plant	3/1/2021	6/9/2025	1,087
2030	Reach 5	Operate Tunnel Water Treatment Plant	3/1/2021	3/6/2024	767
2033	Reach 5	E&W Intervention Grout Zones Sta 668+39	3/15/2021	7/16/2021	88
2040	Reach 5	Indirects Tunnel & Shaft	3/1/2021	9/12/2025	1,154
2043	Reach 5	E&W Grout/Slurry Wall Safe Haven Shafts St	11/19/2021	6/30/2022	155
2050	Reach 5	Surface Mobilize Work Site	3/3/2020	2/26/2021	252
2053	Reach 5	East Excavate Safe Haven Shaft Sta 577+/-	7/1/2022	8/16/2022	32
2060	Reach 5	Excavate & Berm Muck Disposal Area	10/27/2020	2/26/2021	85
2063	Reach 5	East Concrete Safe Haven Shaft Sta 577+/-	8/17/2022	10/13/2022	41
2070	Reach 5	Final Dress & Cleanup Muck Disposal Area	4/14/2025	9/2/2025	80
2073	Reach 5	East Backfill Safe Haven Shaft Sta 577 +	10/10/2023	11/1/2023	17
2083	Reach 5	West Excavate Safe Haven Shaft Sta 577 +	8/17/2022	9/30/2022	32
2103	Reach 5	West Backfill Safe Haven Shaft Sta 577	2/13/2024	3/7/2024	17
2110	Reach 5	E Remove TBM Conveyor, Utilities, Grout &	11/11/2024	4/10/2025	105
2113	Reach 5	E&W Restore Safe Haven Shaft Sta 577+/-	3/11/2024	4/16/2024	22
2213	Reach 5	E&W Intervention Grout Zone Sta 622+60	7/19/2021	11/18/2021	88
2223	Reach 5	E&W Intervention Grout Zone Sta 529+90	7/1/2022	11/3/2022	88
2243	Reach 5	West Concrete Safe Haven Shaft Sta 577 +	10/3/2022	11/29/2022	41
Feature	Reach 5	Routine supply delivery for duration of const.	3/3/2020	9/12/2025	1,503
1010	Reach 6	Tunnel Mob Concurrent With Surface Activi	1/29/2020	2/28/2020	22
1020	Reach 6	Setup East Launch Shaft	3/2/2020	3/13/2020	10
1030	Reach 6	East Launch Shaft Slurry Wall Installati	11/6/2019	2/26/2020	77
1040	Reach 6	Excavate East Launch Shaft	3/16/2020	6/2/2020	56
1050	Reach 6	East Tie Rebar Tremie Slab	6/3/2020	6/16/2020	10
1060	Reach 6	East Setup & place tremie Slab	6/17/2020	6/24/2020	6
1070	Reach 6	East Pump Water From Shaft	7/7/2020	7/9/2020	3
1080	Reach 6	East Cure Time Tremie Slab	6/25/2020	7/6/2020	7
1090	Reach 6	East Muck / Service Shaft Slurry Wall & J	2/27/2020	8/3/2020	111
1100	Reach 6	East Setup & Place Work Slab	7/10/2020	7/13/2020	2
1110	Reach 6	East Tie Rebar Thrust Ring	7/14/2020	8/12/2020	22
1120	Reach 6	East Set breakout forms	8/13/2020	8/14/2020	2
1130	Reach 6	East Form Thrust Ring	8/20/2020	9/2/2020	10
1140	Reach 6	East launch Jet Gout Break in Break out	2/27/2020	5/26/2020	64
1150	Reach 6	East Muck/ Service Excav & Concrete	6/2/2020	9/15/2020	74
1160	Reach 6	East Place Thrust Ring	9/3/2020	9/11/2020	6
1170	Reach 6	Setup For West Launch Shaft	6/16/2020	6/29/2020	10
1180	Reach 6	West Launch Shaft Slurry Wall Installati	2/27/2020	6/15/2020	77

Phase	Feature	Description	Start	End	Days
1190	Reach 6	Excavate West Launch Shaft	6/30/2020	9/17/2020	56
1200	Reach 6	West Launch Jet Grout Break in Break out	5/27/2020	8/26/2020	64
1210	Reach 6	West Tie rebar Tremi Slab	9/18/2020	10/1/2020	10
1220	Reach 6	West Setup & Place Tremi Slab	10/2/2020	10/9/2020	6
1230	Reach 6	West Tie Rebar Thrust Ring	10/28/2020	11/27/2020	22
1240	Reach 6	West Breakout Rng Forms	11/30/2020	12/1/2020	2
1250	Reach 6	West Assemble Thrust Ring Forms	12/2/2020	12/4/2020	3
1260	Reach 6	West Set & Strip Thrust Ring Forms	12/7/2020	12/18/2020	10
1270	Reach 6	West Place Thrust Ring Concrete	12/21/2020	12/29/2020	6
1280	Reach 6	Excavate East Tunnel	1/18/2021	4/6/2026	1,325
1290	Reach 6	West Pump Water From Shaft	10/21/2020	10/23/2020	3
1300	Reach 6	West Cure Time Tremie Slab	10/12/2020	10/20/2020	7
1310	Reach 6	East Assemble Thrust Ring Forms	8/17/2020	8/19/2020	3
1320	Reach 6	West Working Slab	10/1/2020	10/27/2020	20
1330	Reach 6	West Muck / Service Shaft Slurry Wall &	6/16/2020	11/19/2020	111
1340	Reach 6	East Muck / Service Shaft Backfill	4/27/2027	6/2/2027	26
1350	Reach 6	West Muck / Service Excavate & Concrete	9/21/2020	1/5/2021	74
1360	Reach 6	WestMuck / Service Shaft Backfill	8/6/2027	9/15/2027	28
1390	Reach 6	Muck Disposal Conveyor Set Up	3/2/2020	4/20/2020	36
1400	Reach 6	East Launch Shaft Liner & Back fill	5/12/2025	7/21/2025	49
1410	Reach 6	West Launch Shaft Liner & Backfill	8/28/2025	11/5/2025	49
1450	Reach 6	East Launch Shaft Area Complete Pad	6/3/2027	6/24/2027	18
1460	Reach 6	West Launch Shaft Area Complete Pad	9/16/2027	10/7/2027	18
1650	Reach 6	Assemble West TBM	12/30/2020	5/3/2021	87
1660	Reach 6	Assemble East TBM	9/14/2020	1/15/2021	87
1880	Reach 6	Excavate West Tunnel	5/4/2021	7/22/2026	1,325
1890	Reach 6	West Rem TBM Conveyor,Utilities, Grout &	7/23/2026	8/5/2027	264
2010	Reach 6	Operate Muck Disposal Area	4/21/2020	7/31/2026	1,595
2030	Reach 6	Operate Tunnel Water Treatment Plant	3/2/2020	7/27/2027	1,881
2033	Reach 6	E& W Intervention Grout Zones Sta 756 +/-	8/27/2020	12/31/2020	88
2040	Reach 6	Indirects Tunnl & Shaft	3/2/2020	9/16/2027	1,917
2043	Reach 6	E&W Grout & Slury Wall Safe Haven Shafts	1/4/2021	8/11/2021	155
2050	Reach 6	Set up Docks, Berm & Work Site	3/5/2019	2/28/2020	252
2053	Reach 6	East Excavate Safe Haven Shaft Sta 796 +	8/12/2021	9/27/2021	32
2060	Reach 6	Excavate & Berm Muck Disposal Area	10/29/2019	2/28/2020	85
2063	Reach 6	East Concrete Safe Haven Shaft Sta 796 +	9/28/2021	11/24/2021	42
2070	Reach 6	Final Dress & Cleanup Muck Disposal Area	8/3/2026	1/28/2027	100
2073	Reach 6	East Backfill Safe Haven Shaft Sta 796+/-	3/30/2022	4/22/2022	18
2080	Reach 6	Operate Batch Plant	3/2/2020	2/14/2025	1,261
2083	Reach 6	West Excavate Safe Haven Shaft Sta 796 +	9/28/2021	11/10/2021	32
2093	Reach 6	West Concrete Safe Haven Shaft Sta 796 +	11/11/2021	1/12/2022	42
2103	Reach 6	West Backfill Safe Haven Shaft Sta 796	7/15/2022	8/9/2022	18
2110	Reach 6	East Rem TBM Conveyor,Utilities, Grout &	4/7/2026	4/26/2027	268
2113	Reach 6	E&W Restore Safe Haven Shaft Sta 796 +/-	8/10/2022	9/19/2022	22
2123	Reach 6	E&W Intervention Grout Zone Sta 845 +/-	8/12/2021	12/15/2021	88

Phase	Feature	Description	Start	End	Days
2133	Reach 6	E&W Grout & Slurry Wall Safe Haven Shaft	12/16/2021	7/27/2022	155
2143	Reach 6	East Excavate Safe Haven Shaft Sta 894+/-	7/28/2022	9/12/2022	32
2153	Reach 6	East Safe Haven Concrete Sta 894+/-	9/13/2022	11/9/2022	42
2163	Reach 6	East Backfill Safe Haven Sta 894 +/-	11/11/2022	12/7/2022	18
2173	Reach 6	W Excavate safe Haven Shaft Sts 894+/-	9/13/2022	10/26/2022	32
2183	Reach 6	West Concrete Safe Haven Sta 894 +/-	10/27/2022	12/27/2022	42
2193	Reach 6	West Backfill Safe Haven Sta 894+/-	3/1/2023	3/24/2023	18
2203	Reach 6	E&W Restore Surface Safe Haven Sta 894	3/27/2023	5/2/2023	22
2213	Reach 6	E&W Intervention Grout Zone Sta 947 +/-	7/28/2022	11/30/2022	88
2233	Reach 6	E&W Intervention Grout Zone STA 1000 +/-	12/1/2022	4/6/2023	88
2303	Reach 6	E&W Intervention Grout Zone Sta 1052 +/-	4/7/2023	8/10/2023	88
2323	Reach 6	E&W Intervention Grout Zone Sta 1105+/-	8/11/2023	12/14/2023	88
2313	Reach 6	E/W Complete Recovery Shaft Area	1/4/2027	4/12/2027	70
2333	Reach 6	East Recovery Shaft Liner Concrete & Ba	7/14/2026	9/21/2026	49
2353	Reach 6	West Recovery Shaft Liner Concrete & Bac	10/22/2026	12/31/2026	49
Feature	Reach 6	Routine supply delivery for duration of const.	3/5/2019	10/7/2027	2,141
1010	Reaches 123	Tunnel Mob Concurrent With Surface Activi	5/30/2019	7/1/2019	22
1020	Reaches 123	Setup Reach # 2 Launch Shaft Sta 0+00	7/2/2019	7/16/2019	10
1030	Reaches 123	Reach # 2 Slurry Wall Installation	3/4/2019	6/19/2019	77
1040	Reaches 123	Excavate Reach # 2 Launch Shaft	9/20/2019	1/22/2020	86
1050	Reaches 123	Reach # 2 Tie Rebar Tremie Slab	1/23/2020	2/5/2020	10
1060	Reaches 123	Reach # 2 Setup & place tremie Slab	2/6/2020	2/13/2020	6
1070	Reaches 123	Reach # 2 Pump Water From Shaft	2/26/2020	2/28/2020	3
1080	Reaches 123	Reach # 2 Cure Time Tremie Slab	2/14/2020	2/25/2020	7
1100	Reaches 123	Reach # 2 Setup & Place Work Slab	3/2/2020	3/2/2020	1
1110	Reaches 123	Reach # 2 Tie Rebar Thrust Ring	3/3/2020	3/31/2020	21
1120	Reaches 123	Reach # 2 Set breakout forms	4/1/2020	4/2/2020	2
1130	Reaches 123	Reah # 2 Form Thrust Ring	4/8/2020	4/21/2020	10
1140	Reaches 123	Reach # 2 Jet Gout Break in Break out Bl	6/20/2019	9/19/2019	64
1160	Reaches 123	Reach # 2 Place Thrust Ring	4/22/2020	4/30/2020	7
1170	Reaches 123	Setup For Reach #3 Launch Shaft Sta 0+00	1/10/2020	1/23/2020	10
1180	Reaches 123	Reach #3 Slurry Wall Installation	6/20/2019	10/8/2019	77
1190	Reaches 123	Excavate Reach # 3 Launch Shaft	1/24/2020	5/25/2020	86
1200	Reaches 123	Reach # 3 Jet Grout Break in Break out B	10/9/2019	1/9/2020	64
1210	Reaches 123	Reach # 3 Tie rebar Tremi Slab	5/26/2020	6/9/2020	10
1220	Reaches 123	Reach # 3 Setup & Place Tremi Slab	6/10/2020	6/17/2020	6
1230	Reaches 123	Reach # 3 Tie Rebar Thrust Ring	7/6/2020	8/3/2020	21
1240	Reaches 123	Reach # 3 Breakout Rng Forms	8/4/2020	8/5/2020	2
1250	Reaches 123	Reach # 3 Assemble Thrust Ring Forms	8/6/2020	8/10/2020	3
1260	Reaches 123	Reach # 3 Set & Strip Thrust Ring Forms	8/11/2020	8/24/2020	10
1270	Reaches 123	Reach # 3 Place Thrust Ring Concrete	8/25/2020	9/2/2020	7
1280	Reaches 123	Excavate Reach # 2 Tunnel	8/21/2020	11/18/2024	1,078
1290	Reaches 123	Reach # 3 Pump Water From Shaft	6/29/2020	7/1/2020	3
1300	Reaches 123	Reach # 3 Cure Time Tremie Slab	6/18/2020	6/26/2020	7

Phase	Feature	Description	Start	End	Days
1310	Reaches 123	Reach # 2 Assemble Thrust Ring Forms	4/3/2020	4/7/2020	3
1320	Reaches 123	Reach # 3 Working Slab	7/2/2020	7/2/2020	1
1330	Reaches 123	Reach # 2 Launch Shaft Backfill & Line	2/1/2027	6/1/2027	85
1340	Reaches 123	Reach # 3 Launch Shaft Bckfill & Line	7/11/2023	11/7/2023	85
1350	Reaches 123	Reach 2 3 Turnover To Complete Launch Sh	6/2/2027	6/2/2027	1
1390	Reaches 123	Muck Disposal Conveyor Set Up	7/2/2019	8/21/2019	36
1650	Reaches 123	Assemble Reach # 3 TBM	8/25/2020	11/20/2020	63
1660	Reaches 123	Assemble Reach #2 TBM	5/1/2020	8/20/2020	78
1670	Reaches 123	Reassemble 28 Ft TBM Reach # 1	1/22/2025	4/2/2025	50
1880	Reaches 123	Excavate Reach # 3 Tunnel	11/23/2020	2/13/2023	564
1890	Reaches 123	Reach 3 Rem TBM Conveyor,Utilities,Grout	2/14/2023	7/10/2023	102
1900	Reaches 123	Excavate Reach # 1 Tunnel	4/3/2025	4/10/2026	260
1910	Reaches 123	Remove Reach #1-#2 TBM, Conveyor,Grout e	4/13/2026	1/29/2027	204
2010	Reaches 123	Operate Muck Disposal Area	8/22/2019	5/25/2026	1,716
2030	Reaches 123	Operate Tunnel Water Treatment Plant	7/3/2019	6/1/2027	2,009
2033	Reaches 123	Reach # 2 Intervention Grout Zones Sta 4	1/10/2020	3/12/2020	44
2040	Reaches 123	Indirects Tunnel & Shaft	7/2/2019	6/1/2027	2,010
2043	Reaches 123	Reach #2 Grout / Wall Safe Haven Shaft S	3/13/2020	6/30/2020	77
2050	Reaches 123	Set up Docks, Berm & Work Site	7/3/2018	7/1/2019	253
2053	Reaches 123	Reach # 2 Excavate Safe Haven Shaft Sta	7/1/2020	8/17/2020	33
2060	Reaches 123	Excavate & Berm Muck Disposal Area	3/4/2019	7/1/2019	85
2063	Reaches 123	Reach #2 Concrete Safe Haven Sta 98+79	8/18/2020	10/20/2020	45
2070	Reaches 123	Final Dress & Cleanup Muck Disposal Area	5/26/2026	11/19/2026	100
2073	Reaches 123	Reach # 2 Backfill Safe Haven Shaft Sta	11/2/2021	11/26/2021	18
2080	Reaches 123	Batch Plant Operations	7/2/2019	5/28/2027	2,009
2083	Reaches 123	Reach # 3 Grout/Wall Safe Haven Shaft St	7/1/2020	10/19/2020	77
2093	Reaches 123	Reach # 3 Excavate Safe Haven Shaft Sta	10/21/2020	12/28/2020	47
2110	Reaches 123	Reach # 2 Remove TBm & Trailing Gear	11/19/2024	1/21/2025	43
2113	Reaches 123	Reach 2 & 3 Restore Safe Haven Shaft St	12/21/2021	4/7/2022	60
2123	Reaches 123	Reach # 2 Intervention Grout Zone Sta 20	5/14/2020	7/16/2020	44
2133	Reaches 123	Reach # 2 Grout /Wall Safe Haven W/ Shaf	10/20/2020	2/8/2021	77
2153	Reaches 123	Reach #3 Concrete Safe Haven Shaft Sta	12/29/2020	3/3/2021	45
2193	Reaches 123	Reach # 3 Backfill Safe Haven Sta 147+47	5/2/2022	5/25/2022	18
2203	Reaches 123	Reach 2&3 Restore Safe Haven @ Sta 148+ /	5/26/2022	9/13/2022	60
2213	Reaches 123	Reach # 2 Intervention Grout Zone Sta 30	11/19/2020	1/22/2021	44
2223	Reaches 123	Reach 2 turnover Junction Shaft to surf	7/29/2026	7/29/2026	1
2233	Reaches 123	Reach # 2 Intervetion Grout Zone Sta 254	9/18/2020	11/18/2020	44
2243	Reaches 123	Reach # 2 Excavate safe Haven Shaft Sta	3/4/2021	4/19/2021	33
2253	Reaches 123	Reach # 3 Excavate Safe Haven Sta 147+47	7/6/2021	9/8/2021	46
2263	Reaches 123	Reach # 2 Concrete Safe Haven Shaft Sta	4/20/2021	6/22/2021	45
2273	Reaches 123	Reach # 3 Safe Haven Conc Sta 147+47	9/9/2021	11/17/2021	50
2283	Reaches 123	Reach #2 Backfill Safe Haven Sta 148+18	6/7/2022	6/30/2022	18
2293	Reaches 123	Reach # 3 Backfill Safe Haven Shaft Sta	11/24/2021	12/20/2021	18
2303	Reaches 123	reach # 3 Intervention Grout Zone Sta 49	3/13/2020	5/13/2020	44
2313	Reaches 123	Reach #3 Backfill Safe Haven Shaft Sts 1	5/26/2022	6/21/2022	18

Phase	Feature	Description	Start	End	Days
2323	Reaches 123	Reach # 3 Intervention Grout Zone Sta 19	7/17/2020	9/17/2020	44
2343	Reaches 123	Reach # 1 Intervention Grout Zone Sta 41	1/25/2021	3/26/2021	44
2353	Reaches 123	Reach #2-1 Junction Shaft Excav/Conc Com	4/21/2022	11/21/2022	150
2363	Reaches 123	Reach #3 Recovery Shaft Excavation & Co	8/31/2021	12/16/2021	76
2373	Reaches 123	Reach # 1 Recovery Shaft Lining / B'fill	7/8/2026	9/18/2026	52
2393	Reaches 123	Reach # 3 Recovery Shaft Lining & B'fill	5/10/2023	7/24/2023	52
2403	Reaches 123	Reach # 3 Grout/Wall SafeHaven 147+47	2/9/2021	7/2/2021	102
2413	Reaches 123	Reach # 2 Grout & Wall Junction Shaft St	12/17/2021	4/20/2022	86
2453	Reaches 123	Reach # 1 Recovery Shaft Grout & Wall	4/21/2022	9/23/2022	109
2463	Reaches 123	Reach # 3 Recovery Shaft Grout & Wall	3/29/2021	8/30/2021	109
2473	Reaches 123	Reach # 1 Recovery Shaft Eacavation & Co	11/22/2022	3/13/2023	76
Feature	Reaches 123	Routine supply delivery for duration of const.	7/3/2018	6/2/2027	2164
1111	Temporary Power	Intake 2 Temporary Power 69kV	9/1/2023	11/28/2024	325
1112	Temporary Power	Intermediate Forebay to Intake 3 69kV	7/1/2019	9/25/2020	325
1113	Temporary Power	Intermediate Forebay to intake 5 69kV	1/1/2022	3/30/2023	325
1114	Temporary Power	Intermediate Forebay to Staten 230/115kV	9/1/2017	8/29/2019	520
1115	Temporary Power	Bouldin to Staten 230/115 kV	8/1/2018	10/29/2019	325
1116	Temporary Power	Bouldin to Bacon 230/115 kV	8/1/2018	10/29/2019	325
1117	Temporary Power	Clifton Court to Bacon 230 kV	8/1/2017	10/29/2018	325
R7CPP	Delivery	Equipment and material delivery	1/2/2018	12/30/2028	2,878
CCFor	Delivery	Equipment and material delivery	12/29/2023	3/8/2029	1,561
Reach 6	Delivery	Equipment and material delivery	3/5/2019	10/7/2027	2,141
Reach 5	Delivery	Equipment and material delivery	3/3/2020	9/12/2025	1,503
Reach 4	Delivery	Equipment and material delivery	11/6/2018	9/21/2028	2,462
Reaches 123	Delivery	Equipment and material delivery	7/3/2018	6/2/2027	2,164
IntFor	Delivery	Equipment and material delivery	7/1/2024	7/11/2029	1,300
Intakes	Delivery	Equipment and material delivery	11/1/2020	8/5/2029	2285
Tpower69-I2	Delivery	Equipment and material delivery (intake 2)	9/1/2023	11/28/2024	325
Tpower69-I3	Delivery	Equipment and material delivery (intake 3)	7/1/2019	9/25/2020	325
Tpower69-I5	Delivery	Equipment and material delivery (intake 5)	1/1/2022	3/30/2023	325
Tpower230-IF	Delivery	Equipment and material delivery (IF)	9/1/2017	8/29/2019	520
Tpower230-R5	Delivery	Equipment and material delivery (reach 5)	8/1/2018	10/29/2019	325
Tpower230-R6	Delivery	Equipment and material delivery (reach 6)	8/1/2018	10/29/2019	325
Tpower230-R7	Delivery	Equipment and material delivery (reach 7)	8/1/2017	10/29/2018	325
Ppower-CCF	Delivery	Equipment and material delivery (CCF)	1/1/2027	6/30/2027	128
51020	Bridges ^b	Mobilization	1/7/2019	1/13/2019	4
51030	Bridges ^b	Contractors Site Staff	1/7/2019	9/28/2019	152
51050	Bridges ^b	Temporary Facilities	1/10/2019	1/31/2019	12
51060	Bridges ^b	Batch Plant Operation	2/4/2019	8/25/2019	116

Phase	Feature	Description	Start	End	Days
51070	Bridges ^b	Temp Facility Operation	2/4/2019	9/28/2019	136
51110	Bridges ^b	Bridge Structural Exc & Foundation Piles	1/31/2019	3/13/2019	24
51120	Bridges ^b	Bridge Substructure Concrete	3/4/2019	3/24/2019	12
51130	Bridges ^b	Bridge Superstructure Concrete	3/25/2019	8/25/2019	88
51131	Bridges ^b	Bridge Embankment, Paving, & Finish	8/5/2019	9/28/2019	32
Feature	Bridges ^b	Routine supply delivery for duration of const.	1/7/2019	9/28/2019	0
20015	Canals ^b	Contractor Mobilization	9/17/2018	12/23/2018	56
20020	Canals ^b	Contractor Site Staff	9/17/2018	6/7/2023	1,230
20030	Canals ^b	Build Temporary Facilities	9/20/2018	8/13/2019	188
20035	Canals ^b	Temporary Facility Operations	12/1/2018	6/7/2023	1,180
20040	Canals ^b	Batch Plant Operations	7/28/2020	1/19/2023	516
20050	Canals ^b	Construct Temporary Haul Roads	1/30/2019	3/2/2022	644
20110	Canals ^b	Clear and Grub	4/12/2019	6/17/2022	664
20120	Canals ^b	Overexcavate & Replace Under Embankment	4/24/2019	9/15/2022	885
20130	Canals ^b	Canal on-ROW Excavation	5/12/2019	10/15/2022	895
20150	Canals ^b	Canal Embankment placed from imported Borrow	6/23/2019	12/14/2022	728
20170	Canals ^b	Slurry Cut-Off Wall	6/23/2019	11/14/2022	708
20210	Canals ^b	Permanent Roads Along Canal ROW	7/28/2020	1/19/2023	516
20220	Canals ^b	Drainage & Irrigation Ditches Along Canal ROW	7/28/2020	1/19/2023	516
20230	Canals ^b	Canal SWPPP	10/26/2018	1/25/2023	888
20300	Canals ^b	Canal Finish-out	1/24/2022	6/6/2023	284
Feature	Canals ^b	Routine supply delivery for duration of const.	9/17/2018	6/7/2023	1,234
9002	Dredge ^b	MOBILIZATION	1/1/2018	1/14/2018	8
9003	Dredge ^b	CONTRACTOR MANAGEMENT	1/1/2018	7/11/2021	920
9004	Dredge ^b	ACCESS CONSTRUCTION	1/14/2018	2/24/2018	24
9005	Dredge ^b	TEMPORARY FACILITIES	2/1/2018	3/17/2018	24
9006	Dredge ^b	OPERATE TEMP FACILITIES	1/14/2018	7/11/2021	910
9007	Dredge ^b	PREPARE DREDGE MUCK AREA	3/19/2018	8/30/2018	96
9008	Dredge ^b	DREDGING	8/30/2018	1/13/2021	620
9009	Dredge ^b	DRESS & CLEAN-UP DREDGE MUCK PILE	1/14/2021	7/11/2021	104
Feature	Dredge ^b	Routine supply delivery for duration of const.	1/1/2018	7/11/2021	920
11111	Head of Old River Barrier ^b	Phase 1	1/1/2022	2/10/2023	290
11112	Head of Old River Barrier ^b	Phase 2	11/1/2022	4/30/2024	390
11113	Head of Old River Barrier ^b	Phase 3	12/1/2023	5/17/2024	120
Feature	Head of Old River Barrier ^b	Routine supply delivery for duration of const.	1/1/2022	5/17/2024	619
6020	Pipelines ^b	Mobilization	1/4/2021	2/16/2021	24
6030	Pipelines ^b	Contractors Mngt Staff	1/4/2021	3/13/2025	846
6040	Pipelines ^b	Access Construction	1/23/2021	4/15/2021	48

Phase	Feature	Description	Start	End	Days
6050	Pipelines ^b	Erect Temporary Facilities	4/16/2021	1/23/2022	160
6060	Pipelines ^b	Batch Plant Operations	1/26/2022	12/27/2024	608
6070	Pipelines ^b	Temp. Facilities Operations	3/3/2021	3/13/2025	840
6110	Pipelines ^b	16 Ft Dia Pipeline Construction	7/13/2023	4/5/2024	152
6120	Pipelines ^b	23 Ft Dia Intake 1 Pipeline & Manifold	3/16/2023	7/12/2023	68
6130	Pipelines ^b	Transitions from Intake 2 & 3 into Pipeline	1/26/2022	12/5/2022	180
6140	Pipelines ^b	Trans from Pipelines 2 & 3 into Tunnel	4/6/2024	3/9/2025	192
6150	Pipelines ^b	Transitions from Intakes 4 & 5 into Pipelines	12/5/2022	7/20/2023	132
6160	Pipelines ^b	Transitions from Pipelines 4 & 5 into Int. Forebay	7/22/2023	12/27/2024	300
Feature	Pipelines ^b	Routine supply delivery for duration of const.	1/4/2021	3/13/2025	873
10045	Intermediate Pump Plant ^b	Contractor's Site Staff	1/2/2018	9/9/2021	960
10030	Intermediate Pump Plant ^b	Mobilization	1/2/2018	1/20/2018	12
10060	Intermediate Pump Plant ^b	Erect Temporary Facilities	1/10/2018	5/7/2018	68
10065	Intermediate Pump Plant ^b	Temp Facility Operations	2/24/2018	9/9/2021	925
10085	Intermediate Pump Plant ^b	Batch Plant Operations	5/7/2018	2/20/2021	584
10105	Intermediate Pump Plant ^b	Initial Site Work	1/2/2018	1/13/2018	8
10110	Intermediate Pump Plant ^b	Final Site Work	1/25/2021	9/9/2021	132
10115	Intermediate Pump Plant ^b	Excavate for Structures	1/13/2018	4/20/2018	70
10120	Intermediate Pump Plant ^b	Pile Foundation	4/20/2018	11/29/2018	160
10130	Intermediate Pump Plant ^b	Plant Concrete	10/15/2018	8/30/2020	384
10135	Intermediate Pump Plant ^b	Plant Steel Frame Bldg	8/25/2020	2/15/2021	100
10140	Intermediate Pump Plant ^b	Plant Piping	8/25/2020	2/22/2021	104
10145	Intermediate Pump Plant ^b	Pumps, Valves & Operators	5/6/2021	1/17/2022	148
10150	Intermediate Pump Plant ^b	Flow Meter Vaults	9/17/2020	2/20/2021	88
10155	Intermediate Pump Plant ^b	Plant MEP	12/28/2020	5/6/2021	76
10160	Intermediate Pump Plant ^b	Finish Out	5/6/2021	8/22/2021	64
10170	Intermediate Pump Plant ^b	Substation	1/12/2021	5/6/2021	64
10200	Intermediate Pump Plant ^b	Afterbay (East Option Only)	9/16/2020	3/5/2021	96
10300	Intermediate Pump Plant ^b	Bypass (ATO Option Only)	1/6/2019	8/7/2021	540

Phase	Feature	Description	Start	End	Days
10350	Intermediate Pump Plant ^b	DS Manifold & Surge Tower (ATO Option Only)	9/2/2027	11/22/2028	256
Feature	Intermediate Pump Plant ^b	Routine supply delivery for duration of const.	1/2/2018	11/22/2028	1,230
1045	Pump Plants ^b	MANAGEMENT & ADMIN	3/12/2024	5/28/2028	1,100
1065	Pump Plants ^b	TEMP FACILITIES OPS	3/12/2024	5/28/2028	1,100
1085	Pump Plants ^b	BATCH PLANT OPS	4/16/2024	3/27/2028	824
2605	Pump Plants ^b	PUMP PLANT 2 INNITIAL SITE WORK	1/12/2024	2/7/2024	20
2610	Pump Plants ^b	FINAL PUMP PLANT 2 SITE WORK	2/27/2028	5/28/2028	65
2615	Pump Plants ^b	PUMP PLANT 2 GROUND IMPROVEMENTS	2/3/2024	4/17/2024	55
2620	Pump Plants ^b	EXCAVATE FOR PUMP PLANT 2 STRUCTURES	7/10/2026	8/2/2026	12
2630	Pump Plants ^b	PUMP PLANT 2 PILES	8/3/2026	9/2/2026	16
2635	Pump Plants ^b	PUMP PLANT 2 CONCRETE	9/2/2026	5/5/2027	140
2640	Pump Plants ^b	INSTALL PLANT 2 PUMPS & VALVES	6/27/2027	11/12/2027	80
2645	Pump Plants ^b	PUMP PLANT 2 MEP	7/28/2027	12/6/2027	76
2650	Pump Plants ^b	CRANES, STOPLOGS & TRASHRACKS	5/7/2027	10/22/2027	96
2655	Pump Plants ^b	PUMP PLANT 2 STEEL FRAME BUILDING	5/7/2027	6/27/2027	27
2665	Pump Plants ^b	PUMP PLANT 2 DISCHARGE PIPING	9/2/2026	3/5/2027	104
2670	Pump Plants ^b	PUMP PLANT 2 CONCRETE ENCASED HEADER	3/5/2027	10/1/2027	120
2675	Pump Plants ^b	PIPE FROM PUMP PLANT 2 HEADER TO TUNNEL	10/1/2027	12/10/2027	40
2680	Pump Plants ^b	PUMP PLANT 2 SURGE TOWER	8/27/2027	3/7/2028	112
2685	Pump Plants ^b	PUMP PLANT 2 SUBSTATION	9/19/2028	11/19/2028	36
3605	Pump Plants ^b	PUMP PLANT 3 INNITIAL SITE WORK	1/31/2023	2/26/2023	20
3610	Pump Plants ^b	FINAL PUMP PLANT 3 SITE WORK	10/6/2025	1/5/2026	65
3615	Pump Plants ^b	GROUND IMPROVEMENTS	3/18/2023	6/2/2023	55
3620	Pump Plants ^b	EXCAVATE FOR PUMP PLANT 3 STRUCTURES	3/17/2024	4/7/2024	12
3630	Pump Plants ^b	PUMP PLANT 3 PILES	4/16/2024	5/15/2024	16
3635	Pump Plants ^b	PUMP PLANT 3 CONCRETE	5/8/2024	1/8/2025	140
3640	Pump Plants ^b	INSTALL PLANT3 PUMPS & VALVES	3/2/2025	7/18/2025	80
3645	Pump Plants ^b	PUMP PLANT 3 MEP	4/18/2025	8/11/2025	68
3650	Pump Plants ^b	CRANES, STOPLOGS & TRASHRACKS	1/10/2025	6/27/2025	96
3655	Pump Plants ^b	PUMP PLANT 3 STEEL FRAME BUILDING	1/10/2025	3/2/2025	27
3665	Pump Plants ^b	PUMP PLANT 3 DISCHARGE PIPING	4/11/2024	10/12/2024	104
3670	Pump Plants ^b	PUMP PLANT 3 CONCRETE ENCASED HEADER	10/12/2024	5/10/2025	120
3675	Pump Plants ^b	PIPE FROM PUMP PLANT 3 HEADER TO TUNNEL	5/10/2025	7/19/2025	40
3680	Pump Plants ^b	PUMP PLANT 3 SURGE TOWER	4/5/2025	10/15/2025	112
3685	Pump Plants ^b	PUMP PLANT 3 SUBSTATION	4/27/2026	7/19/2026	48
5605	Pump Plants ^b	PUMP PLANT 5 INNITIAL SITE WORK	7/19/2023	8/19/2023	25
5610	Pump Plants ^b	FINAL PUMP PLANT 5 SITE WORK	3/17/2027	6/16/2027	65
5615	Pump Plants ^b	GROUND IMPROVEMENTS	8/6/2023	10/20/2023	55

Phase	Feature	Description	Start	End	Days
5620	Pump Plants ^b	EXCAVATE FOR PUMP PLANT 5 STRUCTURES	8/31/2025	9/21/2025	12
5630	Pump Plants ^b	PUMP PLANT 5 PILES	9/30/2025	10/29/2025	16
5635	Pump Plants ^b	PUMP PLANT 5 CONCRETE	10/2/2025	6/4/2026	140
5640	Pump Plants ^b	INSTALL PLANT 5 PUMPS & VALVES	7/27/2026	12/12/2026	80
5645	Pump Plants ^b	PUMP PLANT 5 MEP	10/28/2026	2/2/2027	56
5650	Pump Plants ^b	CRANES, STOPLOGS & TRASHRACKS	6/6/2026	11/21/2026	96
5655	Pump Plants ^b	PUMP PLANT 5 STEEL FRAME BUILDING	6/6/2026	7/27/2026	28
5665	Pump Plants ^b	PUMP PLANT 5 DISCHARGE PIPING	9/23/2025	3/23/2026	104
5670	Pump Plants ^b	PUMP PLANT 5 CONCRETE ENCASED HEADER	3/23/2026	10/19/2026	120
5675	Pump Plants ^b	PIPE FROM PUMP PLANT 5 HEADER TO TUNNEL	10/19/2026	12/28/2026	40
5680	Pump Plants ^b	PUMP PLANT 5 SURGE TOWER	9/14/2026	3/26/2027	112
5685	Pump Plants ^b	PUMP PLANT 5 SUBSTATION	1/7/2028	3/30/2028	48
Feature	Pump Plants ^b	Routine supply delivery for duration of const.	1/31/2023	11/19/2028	1,155
89020	Siphons ^b	Mobilization	11/12/2022	12/6/2022	16
89030	Siphons ^b	Contractors Mngt Staff	11/12/2022	12/8/2024	540
89040	Siphons ^b	Access Construction	11/26/2022	12/6/2022	8
89050	Siphons ^b	Temporary Facilities	12/7/2022	1/4/2023	16
89060	Siphons ^b	Batch Plant Operation	5/31/2023	10/18/2024	288
89070	Siphons ^b	Temporary Facility Operation	11/28/2022	12/8/2024	530
89111	Siphons ^b	NCCF Siphon Dewater & Drive Sheet Pile, Phase 1	1/2/2023	3/26/2023	60
89112	Siphons ^b	NCCF Siphon Exc & Drive Foundation Pile, Phase 1	3/27/2023	10/4/2023	135
89120	Siphons ^b	NCCF Siphon Concrete, Phase 1	5/31/2023	1/12/2024	128
89130	Siphons ^b	NCCF Siphon Backfill, Gates, & Cont Bldg, Ph 1	9/18/2023	2/5/2024	80
89141	Siphons ^b	NCCF Siphon Dewater & Sheet Pile, Phase 2	11/13/2023	2/4/2024	60
89142	Siphons ^b	NCCF Exc & Drive Foundation Pile, Phase 2	1/14/2024	7/9/2024	125
89150	Siphons ^b	NCCF Siphon Concrete, Phase 2	3/5/2024	10/18/2024	132
89160	Siphons ^b	NCCF Siphon Backfill & Stoplogs, Phase 2	7/1/2024	12/8/2024	92
Feature	Siphons ^b	Routine supply delivery for duration of const.	11/12/2022	12/8/2024	541
^a Geotechnical explorations would only be conducted for Alternative 4.					
^b Feature would only be constructed under certain alternatives.					

1 **Table 22B-2. Heavy-Duty Equipment Inventory**

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8004	Clifton Court Forebay	Cranes	1	0	240	0.29	Diesel
8004	Clifton Court Forebay	Cranes	1	0	335	0.29	Diesel
8004	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8004	Clifton Court Forebay	Crawler Tractors	1	1	145	0.43	Diesel
8004	Clifton Court Forebay	Crawler Tractors	1	1	410	0.43	Diesel
8004	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8004	Clifton Court Forebay	Generator Sets	1	3	12	0.74	Diesel
8004	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8004	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8004	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8004	Clifton Court Forebay	Pavers	1	0	224	0.42	Diesel
8004	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8004	Clifton Court Forebay	Rollers	1	0	110	0.38	Diesel
8004	Clifton Court Forebay	Rollers	1	0	131	0.38	Diesel
8004	Clifton Court Forebay	Rollers	1	1	240	0.38	Diesel
8004	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8004	Clifton Court Forebay	Rollers	1	0	18	0.38	Diesel
8004	Clifton Court Forebay	Rubber Tired Loaders	1	0	211	0.36	Diesel
8004	Clifton Court Forebay	Scrapers	1	0	175	0.48	Diesel
8004	Clifton Court Forebay	Scrapers	1	2	450	0.48	Diesel
8004	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8004	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
8005	Clifton Court Forebay	Air Compressors	1	5	80	0.48	Diesel
8005	Clifton Court Forebay	Cranes	1	0	160	0.29	Diesel
8005	Clifton Court Forebay	Cranes	1	1	240	0.29	Diesel
8005	Clifton Court Forebay	Cranes	1	2	275	0.29	Diesel
8005	Clifton Court Forebay	Cranes	1	3	66	0.29	Diesel
8005	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8005	Clifton Court Forebay	Crawler Tractors	1	0	145	0.43	Diesel
8005	Clifton Court Forebay	Generator Sets	1	1	107	0.74	Diesel
8005	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8005	Clifton Court Forebay	Off-Highway Trucks	1	1	375	0.38	Diesel
8005	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel
8005	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8005	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8005	Clifton Court Forebay	Rubber Tired Loaders	1	2	197	0.36	Diesel
8005	Clifton Court Forebay	Scrapers	1	0	175	0.48	Diesel
8005	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
8005	Clifton Court Forebay	Welders	1	1	48	0.45	Diesel
8006	Clifton Court Forebay	Crawler Tractors	2	5	24	0.43	Diesel
8006	Clifton Court Forebay	Generator Sets	2	5	713	0.74	Diesel
8006	Clifton Court Forebay	Rubber Tired Loaders	2	5	211	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8006	Clifton Court Forebay	Welders	2	5	48	0.45	Diesel
8007	Clifton Court Forebay	Graders	1	2	158	0.41	Diesel
8007	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8007	Clifton Court Forebay	Tractors/Loaders/Backhoes	2	7	87	0.37	Diesel
8010	Clifton Court Forebay	Air Compressors	1	5	115	0.48	Diesel
8010	Clifton Court Forebay	Bore/Drill Rigs	1	11	206	0.5	Diesel
8010	Clifton Court Forebay	Cranes	1	5	240	0.29	Diesel
8010	Clifton Court Forebay	Cranes	1	7	275	0.29	Diesel
8010	Clifton Court Forebay	Cranes	1	5	335	0.29	Diesel
8010	Clifton Court Forebay	Cranes	1	5	66	0.29	Diesel
8010	Clifton Court Forebay	Crawler Tractors	1	1	70	0.43	Diesel
8010	Clifton Court Forebay	Crawler Tractors	2	19	145	0.43	Diesel
8010	Clifton Court Forebay	Crawler Tractors	1	4	410	0.43	Diesel
8010	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
8010	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8010	Clifton Court Forebay	Excavators	1	18	523	0.38	Diesel
8010	Clifton Court Forebay	Excavators	1	3	163	0.38	Diesel
8010	Clifton Court Forebay	Excavators	1	1	315	0.38	Diesel
8010	Clifton Court Forebay	Excavators	1	1	384	0.38	Diesel
8010	Clifton Court Forebay	Gas Pump	1	4	2	0.69	Gasoline
8010	Clifton Court Forebay	Generator Sets	3	15	12	0.74	Diesel
8010	Clifton Court Forebay	Generator Sets	1	5	23	0.74	Diesel
8010	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8010	Clifton Court Forebay	Graders	1	13	215	0.41	Diesel
8010	Clifton Court Forebay	Off-Highway Trucks	2	14	375	0.38	Diesel
8010	Clifton Court Forebay	Off-Highway Trucks	1	11	452	0.38	Diesel
8010	Clifton Court Forebay	Off-Highway Trucks	2	13	650	0.38	Diesel
8010	Clifton Court Forebay	Other construction equipment	1	5	325	0.42	Diesel
8010	Clifton Court Forebay	Pumps	1	2	16	0.74	Diesel
8010	Clifton Court Forebay	Pumps	1	8	60	0.74	Diesel
8010	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8010	Clifton Court Forebay	Rollers	1	9	315	0.38	Diesel
8010	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8010	Clifton Court Forebay	Rubber Tired Loaders	1	7	160	0.36	Diesel
8010	Clifton Court Forebay	Rubber Tired Loaders	1	2	250	0.36	Diesel
8010	Clifton Court Forebay	Rubber Tired Loaders	1	2	501	0.36	Diesel
8010	Clifton Court Forebay	Rubber Tired Loaders	1	1	145	0.36	Diesel
8010	Clifton Court Forebay	Scrapers	1	12	450	0.48	Diesel
8010	Clifton Court Forebay	Scrapers	1	3	500	0.48	Diesel
8010	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	7	101	0.37	Diesel
8010	Clifton Court Forebay	Welders	1	5	48	0.45	Diesel
8012	Clifton Court Forebay	Air Compressors	1	5	115	0.48	Diesel
8012	Clifton Court Forebay	Bore/Drill Rigs	1	11	206	0.5	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8012	Clifton Court Forebay	Cranes	1	5	240	0.29	Diesel
8012	Clifton Court Forebay	Cranes	1	7	275	0.29	Diesel
8012	Clifton Court Forebay	Cranes	1	5	335	0.29	Diesel
8012	Clifton Court Forebay	Cranes	1	5	66	0.29	Diesel
8012	Clifton Court Forebay	Crawler Tractors	1	2	70	0.43	Diesel
8012	Clifton Court Forebay	Crawler Tractors	2	19	145	0.43	Diesel
8012	Clifton Court Forebay	Crawler Tractors	1	4	410	0.43	Diesel
8012	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
8012	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8012	Clifton Court Forebay	Excavators	1	18	523	0.38	Diesel
8012	Clifton Court Forebay	Excavators	1	3	163	0.38	Diesel
8012	Clifton Court Forebay	Excavators	1	1	315	0.38	Diesel
8012	Clifton Court Forebay	Excavators	1	1	384	0.38	Diesel
8012	Clifton Court Forebay	Gas Pump	1	6	2	0.69	Gasoline
8012	Clifton Court Forebay	Generator Sets	3	15	12	0.74	Diesel
8012	Clifton Court Forebay	Generator Sets	1	5	23	0.74	Diesel
8012	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8012	Clifton Court Forebay	Graders	1	13	215	0.41	Diesel
8012	Clifton Court Forebay	Off-Highway Trucks	2	13	375	0.38	Diesel
8012	Clifton Court Forebay	Off-Highway Trucks	1	11	452	0.38	Diesel
8012	Clifton Court Forebay	Off-Highway Trucks	2	13	650	0.38	Diesel
8012	Clifton Court Forebay	Other construction equipment	1	5	325	0.42	Diesel
8012	Clifton Court Forebay	Pumps	1	2	16	0.74	Diesel
8012	Clifton Court Forebay	Pumps	1	8	60	0.74	Diesel
8012	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8012	Clifton Court Forebay	Rollers	1	9	315	0.38	Diesel
8012	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8012	Clifton Court Forebay	Rubber Tired Loaders	1	7	160	0.36	Diesel
8012	Clifton Court Forebay	Rubber Tired Loaders	1	2	250	0.36	Diesel
8012	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8012	Clifton Court Forebay	Rubber Tired Loaders	1	1	145	0.36	Diesel
8012	Clifton Court Forebay	Scrapers	1	12	450	0.48	Diesel
8012	Clifton Court Forebay	Scrapers	1	3	500	0.48	Diesel
8012	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	7	101	0.37	Diesel
8012	Clifton Court Forebay	Welders	1	5	48	0.45	Diesel
8015	Clifton Court Forebay	Air Compressors	1	4	115	0.48	Diesel
8015	Clifton Court Forebay	Bore/Drill Rigs	1	10	206	0.5	Diesel
8015	Clifton Court Forebay	Cranes	1	7	240	0.29	Diesel
8015	Clifton Court Forebay	Cranes	1	6	275	0.29	Diesel
8015	Clifton Court Forebay	Cranes	1	7	335	0.29	Diesel
8015	Clifton Court Forebay	Cranes	1	4	66	0.29	Diesel
8015	Clifton Court Forebay	Crawler Tractors	1	1	70	0.43	Diesel
8015	Clifton Court Forebay	Crawler Tractors	2	16	145	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8015	Clifton Court Forebay	Crawler Tractors	1	3	410	0.43	Diesel
8015	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
8015	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8015	Clifton Court Forebay	Excavators	1	16	523	0.38	Diesel
8015	Clifton Court Forebay	Excavators	1	3	163	0.38	Diesel
8015	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8015	Clifton Court Forebay	Excavators	1	1	384	0.38	Diesel
8015	Clifton Court Forebay	Generator Sets	2	20	12	0.74	Diesel
8015	Clifton Court Forebay	Generator Sets	1	4	23	0.74	Diesel
8015	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8015	Clifton Court Forebay	Graders	1	11	215	0.41	Diesel
8015	Clifton Court Forebay	Off-Highway Trucks	2	12	375	0.38	Diesel
8015	Clifton Court Forebay	Off-Highway Trucks	1	9	452	0.38	Diesel
8015	Clifton Court Forebay	Off-Highway Trucks	2	12	650	0.38	Diesel
8015	Clifton Court Forebay	Other construction equipment	1	4	325	0.42	Diesel
8015	Clifton Court Forebay	Pumps	1	2	16	0.74	Diesel
8015	Clifton Court Forebay	Pumps	1	7	60	0.74	Diesel
8015	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8015	Clifton Court Forebay	Rollers	1	8	315	0.38	Diesel
8015	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8015	Clifton Court Forebay	Rubber Tired Loaders	1	6	160	0.36	Diesel
8015	Clifton Court Forebay	Rubber Tired Loaders	1	2	250	0.36	Diesel
8015	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8015	Clifton Court Forebay	Scrapers	1	11	450	0.48	Diesel
8015	Clifton Court Forebay	Scrapers	1	3	500	0.48	Diesel
8015	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
8015	Clifton Court Forebay	Welders	1	4	48	0.45	Diesel
8025	Clifton Court Forebay	Cranes	1	16	800	0.29	Diesel
8025	Clifton Court Forebay	Crawler Tractors	1	1	24	0.43	Diesel
8025	Clifton Court Forebay	Crawler Tractors	1	1	70	0.43	Diesel
8025	Clifton Court Forebay	Crawler Tractors	1	5	145	0.43	Diesel
8025	Clifton Court Forebay	Crawler Tractors	1	16	310	0.43	Diesel
8025	Clifton Court Forebay	Crawler Tractors	1	2	410	0.43	Diesel
8025	Clifton Court Forebay	Excavators	1	1	523	0.38	Diesel
8025	Clifton Court Forebay	Excavators	1	0	384	0.38	Diesel
8025	Clifton Court Forebay	Gas Pump	1	4	2	0.69	Gasoline
8025	Clifton Court Forebay	Generator Sets	1	5	12	0.74	Diesel
8025	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8025	Clifton Court Forebay	Graders	1	2	215	0.41	Diesel
8025	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8025	Clifton Court Forebay	Off-Highway Trucks	1	3	650	0.38	Diesel
8025	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8025	Clifton Court Forebay	Rollers	1	1	240	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8025	Clifton Court Forebay	Rollers	1	1	315	0.38	Diesel
8025	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8025	Clifton Court Forebay	Rubber Tired Loaders	1	0	145	0.36	Diesel
8025	Clifton Court Forebay	Scrapers	1	9	450	0.48	Diesel
8025	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8025	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
8030	Clifton Court Forebay	Air Compressors	1	11	115	0.48	Diesel
8030	Clifton Court Forebay	Bore/Drill Rigs	2	12	206	0.5	Diesel
8030	Clifton Court Forebay	Cranes	1	11	240	0.29	Diesel
8030	Clifton Court Forebay	Cranes	1	8	275	0.29	Diesel
8030	Clifton Court Forebay	Cranes	1	11	335	0.29	Diesel
8030	Clifton Court Forebay	Cranes	1	11	66	0.29	Diesel
8030	Clifton Court Forebay	Crawler Tractors	1	1	70	0.43	Diesel
8030	Clifton Court Forebay	Crawler Tractors	3	18	145	0.43	Diesel
8030	Clifton Court Forebay	Crawler Tractors	1	6	410	0.43	Diesel
8030	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
8030	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8030	Clifton Court Forebay	Excavators	2	13	523	0.38	Diesel
8030	Clifton Court Forebay	Excavators	1	6	163	0.38	Diesel
8030	Clifton Court Forebay	Excavators	1	1	315	0.38	Diesel
8030	Clifton Court Forebay	Excavators	1	2	384	0.38	Diesel
8030	Clifton Court Forebay	Generator Sets	4	17	12	0.74	Diesel
8030	Clifton Court Forebay	Generator Sets	1	11	23	0.74	Diesel
8030	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8030	Clifton Court Forebay	Graders	1	18	215	0.41	Diesel
8030	Clifton Court Forebay	Off-Highway Trucks	2	15	375	0.38	Diesel
8030	Clifton Court Forebay	Off-Highway Trucks	1	19	452	0.38	Diesel
8030	Clifton Court Forebay	Off-Highway Trucks	3	14	650	0.38	Diesel
8030	Clifton Court Forebay	Other construction equipment	1	11	325	0.42	Diesel
8030	Clifton Court Forebay	Pumps	1	3	16	0.74	Diesel
8030	Clifton Court Forebay	Pumps	1	9	60	0.74	Diesel
8030	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8030	Clifton Court Forebay	Rollers	1	14	315	0.38	Diesel
8030	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8030	Clifton Court Forebay	Rubber Tired Loaders	1	8	160	0.36	Diesel
8030	Clifton Court Forebay	Rubber Tired Loaders	1	5	250	0.36	Diesel
8030	Clifton Court Forebay	Rubber Tired Loaders	1	2	501	0.36	Diesel
8030	Clifton Court Forebay	Scrapers	1	19	450	0.48	Diesel
8030	Clifton Court Forebay	Scrapers	1	4	500	0.48	Diesel
8030	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	8	101	0.37	Diesel
8030	Clifton Court Forebay	Welders	1	11	48	0.45	Diesel
8040	Clifton Court Forebay	Air Compressors	1	6	115	0.48	Diesel
8040	Clifton Court Forebay	Bore/Drill Rigs	1	15	206	0.5	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8040	Clifton Court Forebay	Cranes	1	6	240	0.29	Diesel
8040	Clifton Court Forebay	Cranes	1	9	275	0.29	Diesel
8040	Clifton Court Forebay	Cranes	1	6	335	0.29	Diesel
8040	Clifton Court Forebay	Cranes	1	6	66	0.29	Diesel
8040	Clifton Court Forebay	Crawler Tractors	1	2	70	0.43	Diesel
8040	Clifton Court Forebay	Crawler Tractors	4	16	145	0.43	Diesel
8040	Clifton Court Forebay	Crawler Tractors	1	7	410	0.43	Diesel
8040	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
8040	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8040	Clifton Court Forebay	Excavators	2	14	523	0.38	Diesel
8040	Clifton Court Forebay	Excavators	1	4	163	0.38	Diesel
8040	Clifton Court Forebay	Excavators	1	1	315	0.38	Diesel
8040	Clifton Court Forebay	Excavators	1	3	384	0.38	Diesel
8040	Clifton Court Forebay	Generator Sets	4	20	12	0.74	Diesel
8040	Clifton Court Forebay	Generator Sets	1	6	23	0.74	Diesel
8040	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8040	Clifton Court Forebay	Graders	2	10	215	0.41	Diesel
8040	Clifton Court Forebay	Off-Highway Trucks	2	18	375	0.38	Diesel
8040	Clifton Court Forebay	Off-Highway Trucks	1	15	452	0.38	Diesel
8040	Clifton Court Forebay	Off-Highway Trucks	3	16	650	0.38	Diesel
8040	Clifton Court Forebay	Other construction equipment	1	6	325	0.42	Diesel
8040	Clifton Court Forebay	Pumps	1	4	16	0.74	Diesel
8040	Clifton Court Forebay	Pumps	1	11	60	0.74	Diesel
8040	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8040	Clifton Court Forebay	Rollers	1	16	315	0.38	Diesel
8040	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8040	Clifton Court Forebay	Rubber Tired Loaders	1	9	160	0.36	Diesel
8040	Clifton Court Forebay	Rubber Tired Loaders	1	3	250	0.36	Diesel
8040	Clifton Court Forebay	Rubber Tired Loaders	1	2	501	0.36	Diesel
8040	Clifton Court Forebay	Scrapers	2	11	450	0.48	Diesel
8040	Clifton Court Forebay	Scrapers	1	5	500	0.48	Diesel
8040	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	9	101	0.37	Diesel
8040	Clifton Court Forebay	Welders	1	6	48	0.45	Diesel
8045	Clifton Court Forebay	Air Compressors	1	5	115	0.48	Diesel
8045	Clifton Court Forebay	Bore/Drill Rigs	1	12	206	0.5	Diesel
8045	Clifton Court Forebay	Cranes	1	5	240	0.29	Diesel
8045	Clifton Court Forebay	Cranes	1	7	275	0.29	Diesel
8045	Clifton Court Forebay	Cranes	1	5	335	0.29	Diesel
8045	Clifton Court Forebay	Cranes	1	5	66	0.29	Diesel
8045	Clifton Court Forebay	Crawler Tractors	1	1	70	0.43	Diesel
8045	Clifton Court Forebay	Crawler Tractors	3	17	145	0.43	Diesel
8045	Clifton Court Forebay	Crawler Tractors	1	5	410	0.43	Diesel
8045	Clifton Court Forebay	Crushing/Proc. Equipment	1	0	85	0.78	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8045	Clifton Court Forebay	Excavators	1	0	128	0.38	Diesel
8045	Clifton Court Forebay	Excavators	2	11	523	0.38	Diesel
8045	Clifton Court Forebay	Excavators	1	3	163	0.38	Diesel
8045	Clifton Court Forebay	Excavators	1	1	315	0.38	Diesel
8045	Clifton Court Forebay	Excavators	1	2	384	0.38	Diesel
8045	Clifton Court Forebay	Generator Sets	4	16	12	0.74	Diesel
8045	Clifton Court Forebay	Generator Sets	1	5	23	0.74	Diesel
8045	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8045	Clifton Court Forebay	Graders	1	17	215	0.41	Diesel
8045	Clifton Court Forebay	Off-Highway Trucks	2	14	375	0.38	Diesel
8045	Clifton Court Forebay	Off-Highway Trucks	1	12	452	0.38	Diesel
8045	Clifton Court Forebay	Off-Highway Trucks	2	19	650	0.38	Diesel
8045	Clifton Court Forebay	Other construction equipment	1	5	325	0.42	Diesel
8045	Clifton Court Forebay	Pumps	1	3	16	0.74	Diesel
8045	Clifton Court Forebay	Pumps	1	9	60	0.74	Diesel
8045	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8045	Clifton Court Forebay	Rollers	1	13	315	0.38	Diesel
8045	Clifton Court Forebay	Rollers	1	2	150	0.38	Diesel
8045	Clifton Court Forebay	Rubber Tired Loaders	1	7	160	0.36	Diesel
8045	Clifton Court Forebay	Rubber Tired Loaders	1	3	250	0.36	Diesel
8045	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8045	Clifton Court Forebay	Scrapers	1	18	450	0.48	Diesel
8045	Clifton Court Forebay	Scrapers	1	4	500	0.48	Diesel
8045	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	7	101	0.37	Diesel
8045	Clifton Court Forebay	Welders	1	5	48	0.45	Diesel
8050	Clifton Court Forebay	Cranes	1	7	240	0.29	Diesel
8050	Clifton Court Forebay	Cranes	1	7	335	0.29	Diesel
8050	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8050	Clifton Court Forebay	Crawler Tractors	1	3	145	0.43	Diesel
8050	Clifton Court Forebay	Crawler Tractors	1	3	410	0.43	Diesel
8050	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8050	Clifton Court Forebay	Generator Sets	2	6	12	0.74	Diesel
8050	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8050	Clifton Court Forebay	Graders	1	3	215	0.41	Diesel
8050	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8050	Clifton Court Forebay	Pavers	1	0	224	0.42	Diesel
8050	Clifton Court Forebay	Pumps	1	1	16	0.74	Diesel
8050	Clifton Court Forebay	Rollers	1	0	110	0.38	Diesel
8050	Clifton Court Forebay	Rollers	1	0	131	0.38	Diesel
8050	Clifton Court Forebay	Rollers	1	3	240	0.38	Diesel
8050	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8050	Clifton Court Forebay	Rollers	1	0	18	0.38	Diesel
8050	Clifton Court Forebay	Rubber Tired Loaders	1	1	211	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8050	Clifton Court Forebay	Scrapers	1	9	450	0.48	Diesel
8050	Clifton Court Forebay	Scrapers	1	2	500	0.48	Diesel
8050	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
8060	Clifton Court Forebay	Cranes	1	10	240	0.29	Diesel
8060	Clifton Court Forebay	Cranes	1	6	335	0.29	Diesel
8060	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8060	Clifton Court Forebay	Crawler Tractors	1	5	145	0.43	Diesel
8060	Clifton Court Forebay	Crawler Tractors	1	3	410	0.43	Diesel
8060	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8060	Clifton Court Forebay	Generator Sets	2	6	12	0.74	Diesel
8060	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8060	Clifton Court Forebay	Graders	1	2	215	0.41	Diesel
8060	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8060	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8060	Clifton Court Forebay	Rollers	1	3	240	0.38	Diesel
8060	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8060	Clifton Court Forebay	Rollers	1	0	18	0.38	Diesel
8060	Clifton Court Forebay	Rubber Tired Loaders	1	0	211	0.36	Diesel
8060	Clifton Court Forebay	Scrapers	1	10	450	0.48	Diesel
8060	Clifton Court Forebay	Scrapers	1	2	500	0.48	Diesel
8060	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
8071	Clifton Court Forebay	Bore/Drill Rigs	1	8	206	0.5	Diesel
8071	Clifton Court Forebay	Cranes	2	6	240	0.29	Diesel
8071	Clifton Court Forebay	Cranes	3	7	335	0.29	Diesel
8071	Clifton Court Forebay	Crawler Tractors	2	9	242	0.43	Diesel
8071	Clifton Court Forebay	Crawler Tractors	1	3	310	0.43	Diesel
8071	Clifton Court Forebay	Excavators	1	0	908	0.38	Diesel
8071	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8071	Clifton Court Forebay	Graders	1	2	350	0.41	Diesel
8071	Clifton Court Forebay	Off-Highway Trucks	1	5	489	0.38	Diesel
8071	Clifton Court Forebay	Off-Highway Trucks	2	5	650	0.38	Diesel
8071	Clifton Court Forebay	Other Construction Equipment	1	7	92	0.42	Diesel
8071	Clifton Court Forebay	Other construction equipment	1	6	325	0.42	Diesel
8071	Clifton Court Forebay	Pumps	1	0	60	0.74	Diesel
8071	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8071	Clifton Court Forebay	Rubber Tired Loaders	1	0	800	0.36	Diesel
8071	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8071	Clifton Court Forebay	Welders	1	8	48	0.45	Diesel
8073	Clifton Court Forebay	Air Compressors	1	17	500	0.48	Diesel
8073	Clifton Court Forebay	Air Compressors	1	1	115	0.48	Diesel
8073	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8073	Clifton Court Forebay	Cranes	1	17	365	0.29	Diesel
8073	Clifton Court Forebay	Crawler Tractors	1	1	410	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8073	Clifton Court Forebay	Generator Sets	1	17	143	0.74	Diesel
8073	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8073	Clifton Court Forebay	Off-Highway Trucks	1	2	489	0.38	Diesel
8073	Clifton Court Forebay	Other construction equipment	1	1	36	0.42	Diesel
8073	Clifton Court Forebay	Pumps	1	6	210	0.74	Diesel
8073	Clifton Court Forebay	Pumps	1	0	60	0.74	Diesel
8073	Clifton Court Forebay	Rollers	1	1	315	0.38	Diesel
8073	Clifton Court Forebay	Rubber Tired Loaders	1	0	501	0.36	Diesel
8073	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8073	Clifton Court Forebay	Welders	2	18	48	0.45	Diesel
8075	Clifton Court Forebay	Crawler Tractors	1	2	410	0.43	Diesel
8075	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8075	Clifton Court Forebay	Off-Highway Trucks	1	5	489	0.38	Diesel
8075	Clifton Court Forebay	Pumps	1	1	60	0.74	Diesel
8075	Clifton Court Forebay	Rollers	1	2	315	0.38	Diesel
8075	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8075	Clifton Court Forebay	Scrapers	1	1	500	0.48	Diesel
8077	Clifton Court Forebay	Bore/Drill Rigs	1	8	206	0.5	Diesel
8077	Clifton Court Forebay	Cranes	1	13	240	0.29	Diesel
8077	Clifton Court Forebay	Cranes	2	10	335	0.29	Diesel
8077	Clifton Court Forebay	Crawler Tractors	1	18	242	0.43	Diesel
8077	Clifton Court Forebay	Crawler Tractors	1	3	310	0.43	Diesel
8077	Clifton Court Forebay	Excavators	1	0	908	0.38	Diesel
8077	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8077	Clifton Court Forebay	Graders	1	2	350	0.41	Diesel
8077	Clifton Court Forebay	Off-Highway Trucks	1	4	489	0.38	Diesel
8077	Clifton Court Forebay	Off-Highway Trucks	1	11	650	0.38	Diesel
8077	Clifton Court Forebay	Other Construction Equipment	1	6	92	0.42	Diesel
8077	Clifton Court Forebay	Other construction equipment	1	6	325	0.42	Diesel
8077	Clifton Court Forebay	Pumps	1	0	60	0.74	Diesel
8077	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8077	Clifton Court Forebay	Rubber Tired Loaders	1	0	800	0.36	Diesel
8077	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8077	Clifton Court Forebay	Welders	1	8	48	0.45	Diesel
8079	Clifton Court Forebay	Air Compressors	1	15	500	0.48	Diesel
8079	Clifton Court Forebay	Air Compressors	1	1	115	0.48	Diesel
8079	Clifton Court Forebay	Cranes	1	0	275	0.29	Diesel
8079	Clifton Court Forebay	Cranes	1	15	365	0.29	Diesel
8079	Clifton Court Forebay	Crawler Tractors	1	0	410	0.43	Diesel
8079	Clifton Court Forebay	Generator Sets	1	15	143	0.74	Diesel
8079	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8079	Clifton Court Forebay	Off-Highway Trucks	1	1	489	0.38	Diesel
8079	Clifton Court Forebay	Other construction equipment	1	1	36	0.42	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8079	Clifton Court Forebay	Pumps	1	6	210	0.74	Diesel
8079	Clifton Court Forebay	Pumps	1	0	60	0.74	Diesel
8079	Clifton Court Forebay	Rollers	1	0	315	0.38	Diesel
8079	Clifton Court Forebay	Rubber Tired Loaders	1	0	501	0.36	Diesel
8079	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8079	Clifton Court Forebay	Welders	2	15	48	0.45	Diesel
8081	Clifton Court Forebay	Crawler Tractors	1	1	410	0.43	Diesel
8081	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8081	Clifton Court Forebay	Off-Highway Trucks	1	3	489	0.38	Diesel
8081	Clifton Court Forebay	Pumps	1	1	60	0.74	Diesel
8081	Clifton Court Forebay	Rollers	1	1	315	0.38	Diesel
8081	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8081	Clifton Court Forebay	Scrapers	1	1	500	0.48	Diesel
8090	Clifton Court Forebay	Air Compressors	1	3	115	0.48	Diesel
8090	Clifton Court Forebay	Air Compressors	1	10	310	0.48	Diesel
8090	Clifton Court Forebay	Cranes	1	10	240	0.29	Diesel
8090	Clifton Court Forebay	Cranes	3	8	335	0.29	Diesel
8090	Clifton Court Forebay	Crawler Tractors	1	2	242	0.43	Diesel
8090	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8090	Clifton Court Forebay	Crawler Tractors	1	1	145	0.43	Diesel
8090	Clifton Court Forebay	Crawler Tractors	1	0	410	0.43	Diesel
8090	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8090	Clifton Court Forebay	Generator Sets	1	2	12	0.74	Diesel
8090	Clifton Court Forebay	Generator Sets	1	3	23	0.74	Diesel
8090	Clifton Court Forebay	Generator Sets	1	4	107	0.74	Diesel
8090	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8090	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8090	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8090	Clifton Court Forebay	Other Construction Equipment	1	3	92	0.42	Diesel
8090	Clifton Court Forebay	Other construction equipment	1	2	325	0.42	Diesel
8090	Clifton Court Forebay	Pavers	1	0	224	0.42	Diesel
8090	Clifton Court Forebay	Pumps	1	2	210	0.74	Diesel
8090	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8090	Clifton Court Forebay	Pumps	1	1	60	0.74	Diesel
8090	Clifton Court Forebay	Rollers	1	0	110	0.38	Diesel
8090	Clifton Court Forebay	Rollers	1	0	131	0.38	Diesel
8090	Clifton Court Forebay	Rollers	1	0	240	0.38	Diesel
8090	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8090	Clifton Court Forebay	Rollers	1	0	18	0.38	Diesel
8090	Clifton Court Forebay	Rubber Tired Loaders	1	0	197	0.36	Diesel
8090	Clifton Court Forebay	Rubber Tired Loaders	1	0	211	0.36	Diesel
8090	Clifton Court Forebay	Scrapers	1	1	450	0.48	Diesel
8090	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8090	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
8090	Clifton Court Forebay	Welders	1	7	48	0.45	Diesel
8092	Clifton Court Forebay	Air Compressors	1	3	115	0.48	Diesel
8092	Clifton Court Forebay	Air Compressors	1	9	310	0.48	Diesel
8092	Clifton Court Forebay	Cranes	2	6	240	0.29	Diesel
8092	Clifton Court Forebay	Cranes	3	8	335	0.29	Diesel
8092	Clifton Court Forebay	Crawler Tractors	1	2	242	0.43	Diesel
8092	Clifton Court Forebay	Crawler Tractors	1	0	70	0.43	Diesel
8092	Clifton Court Forebay	Crawler Tractors	1	2	145	0.43	Diesel
8092	Clifton Court Forebay	Crawler Tractors	1	1	410	0.43	Diesel
8092	Clifton Court Forebay	Excavators	1	0	315	0.38	Diesel
8092	Clifton Court Forebay	Generator Sets	1	5	12	0.74	Diesel
8092	Clifton Court Forebay	Generator Sets	1	3	23	0.74	Diesel
8092	Clifton Court Forebay	Generator Sets	1	4	107	0.74	Diesel
8092	Clifton Court Forebay	Graders	1	0	158	0.41	Diesel
8092	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8092	Clifton Court Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
8092	Clifton Court Forebay	Other Construction Equipment	1	3	92	0.42	Diesel
8092	Clifton Court Forebay	Other construction equipment	1	3	325	0.42	Diesel
8092	Clifton Court Forebay	Pumps	1	2	210	0.74	Diesel
8092	Clifton Court Forebay	Pumps	1	0	16	0.74	Diesel
8092	Clifton Court Forebay	Pumps	1	2	60	0.74	Diesel
8092	Clifton Court Forebay	Rollers	1	1	240	0.38	Diesel
8092	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8092	Clifton Court Forebay	Rollers	1	0	18	0.38	Diesel
8092	Clifton Court Forebay	Rubber Tired Loaders	1	0	197	0.36	Diesel
8092	Clifton Court Forebay	Rubber Tired Loaders	1	1	211	0.36	Diesel
8092	Clifton Court Forebay	Scrapers	1	5	450	0.48	Diesel
8092	Clifton Court Forebay	Scrapers	1	0	500	0.48	Diesel
8092	Clifton Court Forebay	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
8096	Clifton Court Forebay	Cranes	3	16	240	0.29	Diesel
8096	Clifton Court Forebay	Cranes	5	18	335	0.29	Diesel
8096	Clifton Court Forebay	Crawler Tractors	3	16	242	0.43	Diesel
8096	Clifton Court Forebay	Crawler Tractors	3	16	310	0.43	Diesel
8096	Clifton Court Forebay	Excavators	1	5	908	0.38	Diesel
8096	Clifton Court Forebay	Graders	1	5	215	0.41	Diesel
8096	Clifton Court Forebay	Graders	3	14	350	0.41	Diesel
8096	Clifton Court Forebay	Off-Highway Trucks	10	19	650	0.38	Diesel
8096	Clifton Court Forebay	Other construction equipment	3	16	325	0.42	Diesel
8101	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8101	Clifton Court Forebay	Bore/Drill Rigs	1	2	206	0.5	Diesel
8101	Clifton Court Forebay	Cranes	1	2	240	0.29	Diesel
8101	Clifton Court Forebay	Cranes	1	2	335	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8101	Clifton Court Forebay	Cranes	1	0	375	0.29	Diesel
8101	Clifton Court Forebay	Crawler Tractors	1	2	242	0.43	Diesel
8101	Clifton Court Forebay	Generator Sets	1	0	23	0.74	Diesel
8101	Clifton Court Forebay	Off-Highway Trucks	1	1	489	0.38	Diesel
8101	Clifton Court Forebay	Other construction equipment	1	0	290	0.42	Diesel
8101	Clifton Court Forebay	Other Construction Equipment	1	2	92	0.42	Diesel
8101	Clifton Court Forebay	Other construction equipment	1	0	325	0.42	Diesel
8101	Clifton Court Forebay	Welders	1	0	48	0.45	Diesel
8103	Clifton Court Forebay	Air Compressors	1	4	500	0.48	Diesel
8103	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8103	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8103	Clifton Court Forebay	Cranes	1	4	375	0.29	Diesel
8103	Clifton Court Forebay	Generator Sets	1	4	143	0.74	Diesel
8103	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8103	Clifton Court Forebay	Off-Highway Trucks	1	2	650	0.38	Diesel
8103	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel
8103	Clifton Court Forebay	Pumps	1	0	80	0.74	Diesel
8103	Clifton Court Forebay	Pumps	1	1	210	0.74	Diesel
8103	Clifton Court Forebay	Pumps	1	2	60	0.74	Diesel
8103	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8103	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8103	Clifton Court Forebay	Welders	2	6	48	0.45	Diesel
8111	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8111	Clifton Court Forebay	Bore/Drill Rigs	1	2	206	0.5	Diesel
8111	Clifton Court Forebay	Cranes	1	1	240	0.29	Diesel
8111	Clifton Court Forebay	Cranes	1	1	335	0.29	Diesel
8111	Clifton Court Forebay	Cranes	1	0	375	0.29	Diesel
8111	Clifton Court Forebay	Crawler Tractors	1	1	242	0.43	Diesel
8111	Clifton Court Forebay	Generator Sets	1	0	23	0.74	Diesel
8111	Clifton Court Forebay	Off-Highway Trucks	1	1	489	0.38	Diesel
8111	Clifton Court Forebay	Other construction equipment	1	0	290	0.42	Diesel
8111	Clifton Court Forebay	Other Construction Equipment	1	1	92	0.42	Diesel
8111	Clifton Court Forebay	Other construction equipment	1	0	325	0.42	Diesel
8111	Clifton Court Forebay	Welders	1	0	48	0.45	Diesel
8113	Clifton Court Forebay	Air Compressors	1	3	500	0.48	Diesel
8113	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8113	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8113	Clifton Court Forebay	Cranes	1	3	375	0.29	Diesel
8113	Clifton Court Forebay	Generator Sets	1	3	143	0.74	Diesel
8113	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8113	Clifton Court Forebay	Off-Highway Trucks	1	2	650	0.38	Diesel
8113	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel
8113	Clifton Court Forebay	Pumps	1	0	80	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8113	Clifton Court Forebay	Pumps	1	1	210	0.74	Diesel
8113	Clifton Court Forebay	Pumps	1	2	60	0.74	Diesel
8113	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8113	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8113	Clifton Court Forebay	Welders	1	8	48	0.45	Diesel
8121	Clifton Court Forebay	Air Compressors	1	4	115	0.48	Diesel
8121	Clifton Court Forebay	Air Compressors	1	0	310	0.48	Diesel
8121	Clifton Court Forebay	Cranes	1	7	240	0.29	Diesel
8121	Clifton Court Forebay	Cranes	1	2	335	0.29	Diesel
8121	Clifton Court Forebay	Cranes	1	4	375	0.29	Diesel
8121	Clifton Court Forebay	Crawler Tractors	1	2	242	0.43	Diesel
8121	Clifton Court Forebay	Generator Sets	1	1	12	0.74	Diesel
8121	Clifton Court Forebay	Generator Sets	1	4	23	0.74	Diesel
8121	Clifton Court Forebay	Off-Highway Trucks	1	4	489	0.38	Diesel
8121	Clifton Court Forebay	Other construction equipment	1	3	290	0.42	Diesel
8121	Clifton Court Forebay	Other Construction Equipment	1	2	92	0.42	Diesel
8121	Clifton Court Forebay	Other construction equipment	1	4	325	0.42	Diesel
8121	Clifton Court Forebay	Pumps	1	0	210	0.74	Diesel
8121	Clifton Court Forebay	Pumps	1	0	70	0.74	Diesel
8121	Clifton Court Forebay	Welders	1	4	48	0.45	Diesel
8123	Clifton Court Forebay	Air Compressors	1	4	500	0.48	Diesel
8123	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8123	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8123	Clifton Court Forebay	Cranes	1	4	375	0.29	Diesel
8123	Clifton Court Forebay	Generator Sets	1	4	143	0.74	Diesel
8123	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8123	Clifton Court Forebay	Off-Highway Trucks	1	2	650	0.38	Diesel
8123	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel
8123	Clifton Court Forebay	Pumps	1	0	80	0.74	Diesel
8123	Clifton Court Forebay	Pumps	1	1	210	0.74	Diesel
8123	Clifton Court Forebay	Pumps	1	2	60	0.74	Diesel
8123	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8123	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8123	Clifton Court Forebay	Welders	2	6	48	0.45	Diesel
8131	Clifton Court Forebay	Air Compressors	1	4	115	0.48	Diesel
8131	Clifton Court Forebay	Air Compressors	1	0	310	0.48	Diesel
8131	Clifton Court Forebay	Cranes	1	5	240	0.29	Diesel
8131	Clifton Court Forebay	Cranes	1	1	335	0.29	Diesel
8131	Clifton Court Forebay	Cranes	1	4	375	0.29	Diesel
8131	Clifton Court Forebay	Crawler Tractors	1	1	242	0.43	Diesel
8131	Clifton Court Forebay	Generator Sets	1	1	12	0.74	Diesel
8131	Clifton Court Forebay	Generator Sets	1	4	23	0.74	Diesel
8131	Clifton Court Forebay	Off-Highway Trucks	1	3	489	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8131	Clifton Court Forebay	Other construction equipment	1	3	290	0.42	Diesel
8131	Clifton Court Forebay	Other Construction Equipment	1	1	92	0.42	Diesel
8131	Clifton Court Forebay	Other construction equipment	1	3	325	0.42	Diesel
8131	Clifton Court Forebay	Pumps	1	0	210	0.74	Diesel
8131	Clifton Court Forebay	Pumps	1	0	70	0.74	Diesel
8131	Clifton Court Forebay	Welders	1	4	48	0.45	Diesel
8133	Clifton Court Forebay	Air Compressors	1	2	500	0.48	Diesel
8133	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8133	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8133	Clifton Court Forebay	Cranes	1	2	375	0.29	Diesel
8133	Clifton Court Forebay	Generator Sets	1	2	143	0.74	Diesel
8133	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8133	Clifton Court Forebay	Off-Highway Trucks	1	1	650	0.38	Diesel
8133	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel
8133	Clifton Court Forebay	Pumps	1	0	80	0.74	Diesel
8133	Clifton Court Forebay	Pumps	1	1	210	0.74	Diesel
8133	Clifton Court Forebay	Pumps	1	1	60	0.74	Diesel
8133	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8133	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8133	Clifton Court Forebay	Welders	1	7	48	0.45	Diesel
8140	Clifton Court Forebay	Air Compressors	1	4	115	0.48	Diesel
8140	Clifton Court Forebay	Air Compressors	1	0	310	0.48	Diesel
8140	Clifton Court Forebay	Cranes	1	7	240	0.29	Diesel
8140	Clifton Court Forebay	Cranes	1	2	335	0.29	Diesel
8140	Clifton Court Forebay	Cranes	1	4	375	0.29	Diesel
8140	Clifton Court Forebay	Crawler Tractors	1	2	242	0.43	Diesel
8140	Clifton Court Forebay	Generator Sets	1	1	12	0.74	Diesel
8140	Clifton Court Forebay	Generator Sets	1	4	23	0.74	Diesel
8140	Clifton Court Forebay	Off-Highway Trucks	1	4	489	0.38	Diesel
8140	Clifton Court Forebay	Other construction equipment	1	3	290	0.42	Diesel
8140	Clifton Court Forebay	Other Construction Equipment	1	2	92	0.42	Diesel
8140	Clifton Court Forebay	Other construction equipment	1	4	325	0.42	Diesel
8140	Clifton Court Forebay	Pumps	1	0	210	0.74	Diesel
8140	Clifton Court Forebay	Pumps	1	0	70	0.74	Diesel
8140	Clifton Court Forebay	Welders	1	4	48	0.45	Diesel
8141	Clifton Court Forebay	Air Compressors	1	2	500	0.48	Diesel
8141	Clifton Court Forebay	Air Compressors	1	0	115	0.48	Diesel
8141	Clifton Court Forebay	Cranes	1	1	275	0.29	Diesel
8141	Clifton Court Forebay	Cranes	1	2	375	0.29	Diesel
8141	Clifton Court Forebay	Generator Sets	1	2	143	0.74	Diesel
8141	Clifton Court Forebay	Graders	1	1	215	0.41	Diesel
8141	Clifton Court Forebay	Off-Highway Trucks	1	2	650	0.38	Diesel
8141	Clifton Court Forebay	Plate Compactors	1	1	8	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8141	Clifton Court Forebay	Pumps	1	1	210	0.74	Diesel
8141	Clifton Court Forebay	Pumps	1	2	60	0.74	Diesel
8141	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8141	Clifton Court Forebay	Rubber Tired Loaders	1	1	501	0.36	Diesel
8141	Clifton Court Forebay	Welders	1	7	48	0.45	Diesel
8145	Clifton Court Forebay	Air Compressors	1	3	115	0.48	Diesel
8145	Clifton Court Forebay	Cranes	1	6	240	0.29	Diesel
8145	Clifton Court Forebay	Cranes	1	6	375	0.29	Diesel
8145	Clifton Court Forebay	Generator Sets	1	3	23	0.74	Diesel
8145	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8145	Clifton Court Forebay	Off-Highway Trucks	2	5	489	0.38	Diesel
8145	Clifton Court Forebay	Other construction equipment	1	2	290	0.42	Diesel
8145	Clifton Court Forebay	Other construction equipment	1	3	325	0.42	Diesel
8145	Clifton Court Forebay	Rollers	1	0	150	0.38	Diesel
8145	Clifton Court Forebay	Welders	1	3	48	0.45	Diesel
8146	Clifton Court Forebay	Air Compressors	1	3	500	0.48	Diesel
8146	Clifton Court Forebay	Cranes	1	3	375	0.29	Diesel
8146	Clifton Court Forebay	Generator Sets	1	3	143	0.74	Diesel
8146	Clifton Court Forebay	Graders	1	0	215	0.41	Diesel
8146	Clifton Court Forebay	Off-Highway Trucks	1	0	650	0.38	Diesel
8146	Clifton Court Forebay	Pavers	1	0	230	0.42	Diesel
8146	Clifton Court Forebay	Plate Compactors	1	0	8	0.43	Diesel
8146	Clifton Court Forebay	Pumps	1	3	210	0.74	Diesel
8146	Clifton Court Forebay	Pumps	1	0	60	0.74	Diesel
8146	Clifton Court Forebay	Rollers	1	1	150	0.38	Diesel
8146	Clifton Court Forebay	Rubber Tired Loaders	1	0	197	0.36	Diesel
8146	Clifton Court Forebay	Rubber Tired Loaders	1	0	501	0.36	Diesel
8146	Clifton Court Forebay	Welders	1	5	48	0.45	Diesel
AccessRoad	Geotechnical Explorations ^a	Crawler Tractors	1	8	208	0.43	Diesel
AccessRoad	Geotechnical Explorations ^a	Excavators	1	8	163	0.38	Diesel
AccessRoad	Geotechnical Explorations ^a	Graders	1	8	215	0.41	Diesel
AccessRoad	Geotechnical Explorations ^a	Rollers	1	8	81	0.38	Diesel
AccessRoad	Geotechnical Explorations ^a	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
Onland	Geotechnical Explorations ^a	Bore/Drill Rigs	1	10	206	0.5	Diesel
Onland	Geotechnical Explorations ^a	Bore/Drill Rigs	5	10	206	0.5	Diesel
Onland	Geotechnical Explorations ^a	Generator Sets	1	24	84	0.74	Diesel
Onland	Geotechnical Explorations ^a	Tractors/Loaders/Backhoes	1	10	98	0.37	Diesel
Overwater	Geotechnical Explorations ^a	Bore/Drill Rigs	1	10	206	0.5	Diesel
Overwater	Geotechnical Explorations ^a	Bore/Drill Rigs	1	10	206	0.5	Diesel
4	Intakes	Air Compressors	4	8	80	0.48	Diesel
4	Intakes	Cranes	1	1	160	0.29	Diesel
4	Intakes	Cranes	1	1	240	0.29	Diesel
4	Intakes	Cranes	1	1	275	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
4	Intakes	Cranes	2	8	66	0.29	Diesel
4	Intakes	Crawler Tractors	1	0	70	0.43	Diesel
4	Intakes	Crawler Tractors	1	0	145	0.43	Diesel
4	Intakes	Generator Sets	1	0	107	0.74	Diesel
4	Intakes	Graders	1	0	215	0.41	Diesel
4	Intakes	Off-Highway Trucks	1	1	375	0.38	Diesel
4	Intakes	Plate Compactors	1	5	8	0.43	Diesel
4	Intakes	Pumps	1	0	16	0.74	Diesel
4	Intakes	Rollers	1	1	150	0.38	Diesel
4	Intakes	Rubber Tired Loaders	1	9	197	0.36	Diesel
4	Intakes	Scrapers	1	0	175	0.48	Diesel
4	Intakes	Tractors/Loaders/Backhoes	1	9	101	0.37	Diesel
4	Intakes	Welders	1	0	48	0.45	Diesel
5	Intakes	Graders	1	1	158	0.41	Diesel
5	Intakes	Rollers	1	1	150	0.38	Diesel
5	Intakes	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
6	Intakes	Air Compressors	1	5	80	0.48	Diesel
6	Intakes	Cranes	1	5	275	0.29	Diesel
6	Intakes	Cranes	1	3	66	0.29	Diesel
7	Intakes	Crawler Tractors	1	6	24	0.43	Diesel
7	Intakes	Generator Sets	1	6	713	0.74	Diesel
7	Intakes	Rubber Tired Loaders	2	9	211	0.36	Diesel
7	Intakes	Welders	1	1	48	0.45	Diesel
201	Intakes	Air Compressors	2	8	115	0.48	Diesel
201	Intakes	Cranes	2	8	240	0.29	Diesel
201	Intakes	Cranes	2	8	375	0.29	Diesel
201	Intakes	Cranes	2	8	66	0.29	Diesel
201	Intakes	Generator Sets	4	8	12	0.74	Diesel
201	Intakes	Generator Sets	2	8	23	0.74	Diesel
201	Intakes	Other construction equipment	2	8	325	0.42	Diesel
201	Intakes	Welders	2	8	48	0.45	Diesel
203	Intakes	Air Compressors	1	6	80	0.48	Diesel
203	Intakes	Cranes	1	6	160	0.29	Diesel
203	Intakes	Cranes	1	2	240	0.29	Diesel
203	Intakes	Cranes	1	0	335	0.29	Diesel
203	Intakes	Cranes	1	6	66	0.29	Diesel
203	Intakes	Crawler Tractors	1	0	242	0.43	Diesel
203	Intakes	Crawler Tractors	1	1	70	0.43	Diesel
203	Intakes	Crawler Tractors	1	0	145	0.43	Diesel
203	Intakes	Excavators	1	0	384	0.38	Diesel
203	Intakes	Generator Sets	1	1	107	0.74	Diesel
203	Intakes	Graders	1	0	158	0.41	Diesel
203	Intakes	Off-Highway Trucks	1	2	375	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
203	Intakes	Off-Highway Trucks	1	1	452	0.38	Diesel
203	Intakes	Other Construction Equipment	1	0	92	0.42	Diesel
203	Intakes	Plate Compactors	1	5	8	0.43	Diesel
203	Intakes	Rollers	1	1	150	0.38	Diesel
203	Intakes	Rubber Tired Loaders	2	6	197	0.36	Diesel
203	Intakes	Tractors/Loaders/Backhoes	2	5	101	0.37	Diesel
203	Intakes	Welders	1	1	48	0.45	Diesel
205	Intakes	Bore/Drill Rigs	4	8	210	0.5	Diesel
205	Intakes	Cranes	4	8	160	0.29	Diesel
205	Intakes	Cranes	1	8	275	0.29	Diesel
205	Intakes	Crawler Tractors	1	2	70	0.43	Diesel
205	Intakes	Crawler Tractors	2	9	145	0.43	Diesel
205	Intakes	Crawler Tractors	1	0	410	0.43	Diesel
205	Intakes	Excavators	1	8	315	0.38	Diesel
205	Intakes	Excavators	1	3	384	0.38	Diesel
205	Intakes	Gas Pump	1	3	2	0.69	Gasoline
205	Intakes	Generator Sets	1	2	12	0.74	Diesel
205	Intakes	Graders	1	0	158	0.41	Diesel
205	Intakes	Graders	1	4	215	0.41	Diesel
205	Intakes	Off-Highway Trucks	3	9	375	0.38	Diesel
205	Intakes	Off-Highway Trucks	1	4	452	0.38	Diesel
205	Intakes	Pumps	1	1	16	0.74	Diesel
205	Intakes	Pumps	1	8	60	0.74	Diesel
205	Intakes	Rollers	1	0	240	0.38	Diesel
205	Intakes	Rollers	1	6	315	0.38	Diesel
205	Intakes	Rollers	1	1	150	0.38	Diesel
205	Intakes	Rollers	1	0	18	0.38	Diesel
205	Intakes	Rubber Tired Loaders	1	8	211	0.36	Diesel
205	Intakes	Rubber Tired Loaders	1	8	160	0.36	Diesel
205	Intakes	Rubber Tired Loaders	1	0	501	0.36	Diesel
205	Intakes	Rubber Tired Loaders	1	0	145	0.36	Diesel
205	Intakes	Scrapers	1	2	450	0.48	Diesel
205	Intakes	Scrapers	1	0	500	0.48	Diesel
205	Intakes	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
205	Intakes	Tractors/Loaders/Backhoes	5	8	101	0.37	Diesel
206	Intakes	Air Compressors	1	4	115	0.48	Diesel
206	Intakes	Air Compressors	4	9	310	0.48	Diesel
206	Intakes	Cranes	3	9	240	0.29	Diesel
206	Intakes	Cranes	9	9	335	0.29	Diesel
206	Intakes	Cranes	1	4	375	0.29	Diesel
206	Intakes	Crawler Tractors	1	4	242	0.43	Diesel
206	Intakes	Excavators	1	0	128	0.38	Diesel
206	Intakes	Excavators	1	1	315	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
206	Intakes	Generator Sets	1	4	23	0.74	Diesel
206	Intakes	Generator Sets	2	9	107	0.74	Diesel
206	Intakes	Other Construction Equipment	1	8	92	0.42	Diesel
206	Intakes	Other construction equipment	1	4	325	0.42	Diesel
206	Intakes	Plate Compactors	1	0	8	0.43	Diesel
206	Intakes	Pumps	1	7	210	0.74	Diesel
206	Intakes	Pumps	1	0	60	0.74	Diesel
206	Intakes	Welders	3	7	48	0.45	Diesel
207	Intakes	Air Compressors	2	16	115	0.48	Diesel
207	Intakes	Cranes	2	11	240	0.29	Diesel
207	Intakes	Cranes	2	16	375	0.29	Diesel
207	Intakes	Cranes	2	16	66	0.29	Diesel
207	Intakes	Generator Sets	2	15	12	0.74	Diesel
207	Intakes	Generator Sets	2	16	23	0.74	Diesel
207	Intakes	Other construction equipment	2	15	325	0.42	Diesel
207	Intakes	Welders	2	16	48	0.45	Diesel
209	Intakes	Crawler Tractors	1	3	24	0.43	Diesel
209	Intakes	Crawler Tractors	1	3	70	0.43	Diesel
209	Intakes	Crawler Tractors	9	9	145	0.43	Diesel
209	Intakes	Crawler Tractors	1	2	410	0.43	Diesel
209	Intakes	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
209	Intakes	Excavators	1	1	128	0.38	Diesel
209	Intakes	Excavators	5	9	384	0.38	Diesel
209	Intakes	Generator Sets	1	1	12	0.74	Diesel
209	Intakes	Graders	3	7	215	0.41	Diesel
209	Intakes	Off-Highway Trucks	3	9	375	0.38	Diesel
209	Intakes	Off-Highway Trucks	18	10	489	0.38	Diesel
209	Intakes	Pavers	1	0	224	0.42	Diesel
209	Intakes	Pavers	1	3	230	0.42	Diesel
209	Intakes	Pavers	1	3	92	0.42	Diesel
209	Intakes	Plate Compactors	1	2	8	0.43	Diesel
209	Intakes	Pumps	1	8	16	0.74	Diesel
209	Intakes	Rollers	1	0	110	0.38	Diesel
209	Intakes	Rollers	1	0	131	0.38	Diesel
209	Intakes	Rollers	1	1	240	0.38	Diesel
209	Intakes	Rollers	3	10	315	0.38	Diesel
209	Intakes	Rollers	1	7	150	0.38	Diesel
209	Intakes	Rollers	1	3	18	0.38	Diesel
209	Intakes	Rubber Tired Loaders	1	6	197	0.36	Diesel
209	Intakes	Rubber Tired Loaders	1	2	211	0.36	Diesel
209	Intakes	Scrapers	1	7	450	0.48	Diesel
209	Intakes	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
209	Intakes	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
211	Intakes	Air Compressors	1	0	80	0.48	Diesel
211	Intakes	Cement and Mortar Mixers	2	16	18	0.56	Diesel
211	Intakes	Cranes	2	16	100	0.29	Diesel
211	Intakes	Cranes	1	0	66	0.29	Diesel
211	Intakes	Pumps	2	16	215	0.74	Diesel
211	Intakes	Tractors/Loaders/Backhoes	2	16	101	0.37	Diesel
213	Intakes	Cranes	3	7	375	0.29	Diesel
213	Intakes	Crawler Tractors	1	5	145	0.43	Diesel
213	Intakes	Crawler Tractors	2	6	310	0.43	Diesel
213	Intakes	Excavators	1	2	523	0.38	Diesel
213	Intakes	Graders	1	1	215	0.41	Diesel
213	Intakes	Off-Highway Trucks	1	10	489	0.38	Diesel
213	Intakes	Off-Highway Trucks	7	9	650	0.38	Diesel
213	Intakes	Rollers	1	5	240	0.38	Diesel
215	Intakes	Air Compressors	1	1	80	0.48	Diesel
215	Intakes	Air Compressors	1	7	115	0.48	Diesel
215	Intakes	Bore/Drill Rigs	1	7	484	0.5	Diesel
215	Intakes	Cranes	1	7	100	0.29	Diesel
215	Intakes	Cranes	1	2	240	0.29	Diesel
215	Intakes	Cranes	1	5	335	0.29	Diesel
215	Intakes	Cranes	1	0	66	0.29	Diesel
215	Intakes	Crawler Tractors	1	7	145	0.43	Diesel
215	Intakes	Off-Highway Trucks	1	14	375	0.38	Diesel
215	Intakes	Pumps	1	7	60	0.74	Diesel
215	Intakes	Rubber Tired Loaders	1	7	160	0.36	Diesel
215	Intakes	Tractors/Loaders/Backhoes	1	7	101	0.37	Diesel
217	Intakes	Air Compressors	1	6	115	0.48	Diesel
217	Intakes	Air Compressors	2	6	310	0.48	Diesel
217	Intakes	Cranes	4	8	240	0.29	Diesel
217	Intakes	Generator Sets	4	10	12	0.74	Diesel
217	Intakes	Generator Sets	1	6	23	0.74	Diesel
217	Intakes	Pumps	2	6	210	0.74	Diesel
217	Intakes	Welders	1	6	48	0.45	Diesel
219	Intakes	Cranes	11	9	240	0.29	Diesel
219	Intakes	Cranes	11	9	335	0.29	Diesel
219	Intakes	Pumps	2	5	85	0.74	Diesel
221	Intakes	Air Compressors	2	10	310	0.48	Diesel
221	Intakes	Cranes	1	10	240	0.29	Diesel
221	Intakes	Cranes	4	10	335	0.29	Diesel
221	Intakes	Generator Sets	1	10	107	0.74	Diesel
221	Intakes	Pumps	1	3	210	0.74	Diesel
221	Intakes	Welders	1	10	48	0.45	Diesel
223	Intakes	Cranes	1	4	160	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
223	Intakes	Cranes	5	8	335	0.29	Diesel
225	Intakes	Air Compressors	2	9	80	0.48	Diesel
225	Intakes	Cranes	1	1	240	0.29	Diesel
225	Intakes	Cranes	1	2	335	0.29	Diesel
225	Intakes	Cranes	1	0	335	0.29	Diesel
225	Intakes	Welders	4	9	48	0.45	Diesel
227	Intakes	Air Compressors	3	10	80	0.48	Diesel
227	Intakes	Air Compressors	1	3	115	0.48	Diesel
227	Intakes	Cranes	1	0	160	0.29	Diesel
227	Intakes	Cranes	1	0	240	0.29	Diesel
227	Intakes	Cranes	1	4	335	0.29	Diesel
227	Intakes	Cranes	1	1	335	0.29	Diesel
227	Intakes	Cranes	2	6	66	0.29	Diesel
227	Intakes	Crawler Tractors	1	0	70	0.43	Diesel
227	Intakes	Generator Sets	1	0	107	0.74	Diesel
227	Intakes	Off-Highway Trucks	1	0	375	0.38	Diesel
227	Intakes	Rollers	1	0	150	0.38	Diesel
227	Intakes	Rubber Tired Loaders	1	0	197	0.36	Diesel
227	Intakes	Welders	1	3	48	0.45	Diesel
229	Intakes	Air Compressors	1	5	115	0.48	Diesel
229	Intakes	Cranes	1	5	375	0.29	Diesel
229	Intakes	Cranes	1	9	66	0.29	Diesel
229	Intakes	Crawler Tractors	1	4	24	0.43	Diesel
229	Intakes	Excavators	1	8	163	0.38	Diesel
229	Intakes	Generator Sets	2	8	12	0.74	Diesel
229	Intakes	Generator Sets	1	5	23	0.74	Diesel
229	Intakes	Other construction equipment	1	5	325	0.42	Diesel
229	Intakes	Pumps	1	4	16	0.74	Diesel
229	Intakes	Rubber Tired Loaders	1	8	160	0.36	Diesel
229	Intakes	Welders	1	5	48	0.45	Diesel
251	Intakes	Bore/Drill Rigs	1	3	206	0.5	Diesel
253	Intakes	Crawler Tractors	3	7	310	0.43	Diesel
253	Intakes	Excavators	3	7	908	0.38	Diesel
253	Intakes	Graders	3	8	215	0.41	Diesel
253	Intakes	Off-Highway Trucks	1	1	489	0.38	Diesel
253	Intakes	Off-Highway Trucks	9	10	650	0.38	Diesel
253	Intakes	Pumps	1	1	60	0.74	Diesel
253	Intakes	Rollers	1	1	150	0.38	Diesel
253	Intakes	Rubber Tired Loaders	1	1	800	0.36	Diesel
253	Intakes	Scrapers	1	1	500	0.48	Diesel
254	Intakes	Crawler Tractors	1	2	145	0.43	Diesel
254	Intakes	Graders	2	10	215	0.41	Diesel
254	Intakes	Pavers	1	7	224	0.42	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
254	Intakes	Pumps	1	6	60	0.74	Diesel
254	Intakes	Rollers	1	7	110	0.38	Diesel
254	Intakes	Rollers	1	7	131	0.38	Diesel
254	Intakes	Rollers	1	10	150	0.38	Diesel
254	Intakes	Rubber Tired Loaders	1	6	501	0.36	Diesel
254	Intakes	Scrapers	1	4	175	0.48	Diesel
254	Intakes	Scrapers	1	6	500	0.48	Diesel
254	Intakes	Tractors/Loaders/Backhoes	1	7	87	0.37	Diesel
255	Intakes	Air Compressors	1	4	115	0.48	Diesel
255	Intakes	Cranes	2	6	240	0.29	Diesel
255	Intakes	Cranes	2	9	335	0.29	Diesel
255	Intakes	Crawler Tractors	1	10	242	0.43	Diesel
255	Intakes	Excavators	1	4	384	0.38	Diesel
255	Intakes	Off-Highway Trucks	2	6	452	0.38	Diesel
255	Intakes	Other Construction Equipment	1	10	92	0.42	Diesel
255	Intakes	Pumps	1	4	210	0.74	Diesel
255	Intakes	Rollers	1	4	18	0.38	Diesel
257	Intakes	Air Compressors	2	10	310	0.48	Diesel
257	Intakes	Cranes	1	10	240	0.29	Diesel
257	Intakes	Cranes	5	10	335	0.29	Diesel
257	Intakes	Generator Sets	1	10	107	0.74	Diesel
257	Intakes	Pumps	1	6	210	0.74	Diesel
257	Intakes	Welders	1	10	48	0.45	Diesel
259	Intakes	Cranes	4	9	240	0.29	Diesel
259	Intakes	Cranes	3	7	275	0.29	Diesel
259	Intakes	Cranes	1	2	335	0.29	Diesel
261	Intakes	Air Compressors	1	2	115	0.48	Diesel
261	Intakes	Cranes	1	1	275	0.29	Diesel
261	Intakes	Cranes	1	2	335	0.29	Diesel
261	Intakes	Cranes	1	0	335	0.29	Diesel
261	Intakes	Cranes	2	8	66	0.29	Diesel
261	Intakes	Crawler Tractors	1	3	24	0.43	Diesel
261	Intakes	Pumps	1	3	16	0.74	Diesel
261	Intakes	Welders	2	6	48	0.45	Diesel
301	Intakes	Air Compressors	2	8	115	0.48	Diesel
301	Intakes	Cranes	2	8	240	0.29	Diesel
301	Intakes	Cranes	2	8	375	0.29	Diesel
301	Intakes	Cranes	2	8	66	0.29	Diesel
301	Intakes	Generator Sets	4	8	12	0.74	Diesel
301	Intakes	Generator Sets	2	8	23	0.74	Diesel
301	Intakes	Other construction equipment	2	8	325	0.42	Diesel
301	Intakes	Welders	2	8	48	0.45	Diesel
303	Intakes	Air Compressors	1	5	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
303	Intakes	Cranes	1	5	160	0.29	Diesel
303	Intakes	Cranes	1	1	240	0.29	Diesel
303	Intakes	Cranes	1	0	335	0.29	Diesel
303	Intakes	Cranes	1	5	66	0.29	Diesel
303	Intakes	Crawler Tractors	1	0	242	0.43	Diesel
303	Intakes	Crawler Tractors	1	1	70	0.43	Diesel
303	Intakes	Crawler Tractors	1	0	145	0.43	Diesel
303	Intakes	Excavators	1	0	384	0.38	Diesel
303	Intakes	Generator Sets	1	0	107	0.74	Diesel
303	Intakes	Graders	1	0	158	0.41	Diesel
303	Intakes	Off-Highway Trucks	1	1	375	0.38	Diesel
303	Intakes	Off-Highway Trucks	1	1	452	0.38	Diesel
303	Intakes	Other Construction Equipment	1	0	92	0.42	Diesel
303	Intakes	Plate Compactors	1	4	8	0.43	Diesel
303	Intakes	Rollers	1	1	150	0.38	Diesel
303	Intakes	Rubber Tired Loaders	1	9	197	0.36	Diesel
303	Intakes	Tractors/Loaders/Backhoes	1	9	101	0.37	Diesel
303	Intakes	Welders	1	0	48	0.45	Diesel
305	Intakes	Bore/Drill Rigs	4	9	210	0.5	Diesel
305	Intakes	Cranes	4	9	160	0.29	Diesel
305	Intakes	Cranes	1	9	275	0.29	Diesel
305	Intakes	Crawler Tractors	1	2	70	0.43	Diesel
305	Intakes	Crawler Tractors	3	7	145	0.43	Diesel
305	Intakes	Crawler Tractors	1	1	410	0.43	Diesel
305	Intakes	Excavators	1	9	315	0.38	Diesel
305	Intakes	Excavators	1	4	384	0.38	Diesel
305	Intakes	Gas Pump	1	4	2	0.69	Gasoline
305	Intakes	Generator Sets	1	3	12	0.74	Diesel
305	Intakes	Graders	1	0	158	0.41	Diesel
305	Intakes	Graders	1	6	215	0.41	Diesel
305	Intakes	Off-Highway Trucks	4	8	375	0.38	Diesel
305	Intakes	Off-Highway Trucks	1	4	452	0.38	Diesel
305	Intakes	Pumps	1	2	16	0.74	Diesel
305	Intakes	Pumps	1	9	60	0.74	Diesel
305	Intakes	Rollers	1	1	240	0.38	Diesel
305	Intakes	Rollers	1	8	315	0.38	Diesel
305	Intakes	Rollers	1	1	150	0.38	Diesel
305	Intakes	Rollers	1	0	18	0.38	Diesel
305	Intakes	Rubber Tired Loaders	1	10	211	0.36	Diesel
305	Intakes	Rubber Tired Loaders	1	9	160	0.36	Diesel
305	Intakes	Rubber Tired Loaders	1	0	501	0.36	Diesel
305	Intakes	Rubber Tired Loaders	1	0	145	0.36	Diesel
305	Intakes	Scrapers	1	3	450	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
305	Intakes	Scrapers	1	1	500	0.48	Diesel
305	Intakes	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
305	Intakes	Tractors/Loaders/Backhoes	5	9	101	0.37	Diesel
306	Intakes	Air Compressors	1	3	115	0.48	Diesel
306	Intakes	Air Compressors	4	8	310	0.48	Diesel
306	Intakes	Cranes	3	7	240	0.29	Diesel
306	Intakes	Cranes	7	10	335	0.29	Diesel
306	Intakes	Cranes	1	3	375	0.29	Diesel
306	Intakes	Crawler Tractors	1	3	242	0.43	Diesel
306	Intakes	Excavators	1	0	128	0.38	Diesel
306	Intakes	Excavators	1	1	315	0.38	Diesel
306	Intakes	Generator Sets	1	3	23	0.74	Diesel
306	Intakes	Generator Sets	2	8	107	0.74	Diesel
306	Intakes	Other Construction Equipment	1	6	92	0.42	Diesel
306	Intakes	Other construction equipment	1	3	325	0.42	Diesel
306	Intakes	Plate Compactors	1	0	8	0.43	Diesel
306	Intakes	Pumps	1	6	210	0.74	Diesel
306	Intakes	Pumps	1	0	60	0.74	Diesel
306	Intakes	Welders	2	9	48	0.45	Diesel
307	Intakes	Air Compressors	2	15	115	0.48	Diesel
307	Intakes	Cranes	2	10	240	0.29	Diesel
307	Intakes	Cranes	2	15	375	0.29	Diesel
307	Intakes	Cranes	2	15	66	0.29	Diesel
307	Intakes	Generator Sets	2	14	12	0.74	Diesel
307	Intakes	Generator Sets	2	15	23	0.74	Diesel
307	Intakes	Other construction equipment	2	14	325	0.42	Diesel
307	Intakes	Welders	2	15	48	0.45	Diesel
309	Intakes	Air Compressors	2	9	80	0.48	Diesel
309	Intakes	Cranes	2	9	160	0.29	Diesel
309	Intakes	Cranes	1	1	240	0.29	Diesel
309	Intakes	Cranes	2	9	66	0.29	Diesel
309	Intakes	Crawler Tractors	1	3	24	0.43	Diesel
309	Intakes	Crawler Tractors	1	3	70	0.43	Diesel
309	Intakes	Crawler Tractors	9	9	145	0.43	Diesel
309	Intakes	Crawler Tractors	1	2	410	0.43	Diesel
309	Intakes	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
309	Intakes	Excavators	1	1	128	0.38	Diesel
309	Intakes	Excavators	5	9	384	0.38	Diesel
309	Intakes	Generator Sets	1	1	12	0.74	Diesel
309	Intakes	Generator Sets	1	1	107	0.74	Diesel
309	Intakes	Graders	3	7	215	0.41	Diesel
309	Intakes	Off-Highway Trucks	3	9	375	0.38	Diesel
309	Intakes	Off-Highway Trucks	18	10	489	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
309	Intakes	Pavers	1	0	224	0.42	Diesel
309	Intakes	Pavers	1	3	230	0.42	Diesel
309	Intakes	Pavers	1	3	92	0.42	Diesel
309	Intakes	Plate Compactors	1	2	8	0.43	Diesel
309	Intakes	Pumps	1	8	16	0.74	Diesel
309	Intakes	Rollers	1	0	110	0.38	Diesel
309	Intakes	Rollers	1	0	131	0.38	Diesel
309	Intakes	Rollers	1	1	240	0.38	Diesel
309	Intakes	Rollers	3	10	315	0.38	Diesel
309	Intakes	Rollers	1	7	150	0.38	Diesel
309	Intakes	Rollers	1	3	18	0.38	Diesel
309	Intakes	Rubber Tired Loaders	1	7	197	0.36	Diesel
309	Intakes	Rubber Tired Loaders	1	2	211	0.36	Diesel
309	Intakes	Scrapers	1	7	450	0.48	Diesel
309	Intakes	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
309	Intakes	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
309	Intakes	Welders	1	1	48	0.45	Diesel
311	Intakes	Air Compressors	1	0	80	0.48	Diesel
311	Intakes	Cement and Mortar Mixers	1	16	18	0.56	Diesel
311	Intakes	Cranes	1	16	100	0.29	Diesel
311	Intakes	Cranes	1	0	66	0.29	Diesel
311	Intakes	Pumps	1	16	215	0.74	Diesel
311	Intakes	Tractors/Loaders/Backhoes	1	16	101	0.37	Diesel
313	Intakes	Cranes	2	5	375	0.29	Diesel
313	Intakes	Crawler Tractors	1	2	145	0.43	Diesel
313	Intakes	Crawler Tractors	1	6	310	0.43	Diesel
313	Intakes	Excavators	1	1	523	0.38	Diesel
313	Intakes	Graders	1	1	215	0.41	Diesel
313	Intakes	Off-Highway Trucks	1	5	489	0.38	Diesel
313	Intakes	Off-Highway Trucks	4	8	650	0.38	Diesel
313	Intakes	Rollers	1	2	240	0.38	Diesel
315	Intakes	Air Compressors	1	2	80	0.48	Diesel
315	Intakes	Air Compressors	1	9	115	0.48	Diesel
315	Intakes	Bore/Drill Rigs	1	9	484	0.5	Diesel
315	Intakes	Cranes	1	9	100	0.29	Diesel
315	Intakes	Cranes	1	2	240	0.29	Diesel
315	Intakes	Cranes	1	5	335	0.29	Diesel
315	Intakes	Cranes	1	1	66	0.29	Diesel
315	Intakes	Crawler Tractors	1	9	145	0.43	Diesel
315	Intakes	Off-Highway Trucks	1	17	375	0.38	Diesel
315	Intakes	Pumps	1	9	60	0.74	Diesel
315	Intakes	Rubber Tired Loaders	1	9	160	0.36	Diesel
315	Intakes	Tractors/Loaders/Backhoes	1	9	101	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
317	Intakes	Air Compressors	1	5	115	0.48	Diesel
317	Intakes	Air Compressors	2	7	310	0.48	Diesel
317	Intakes	Cranes	3	9	240	0.29	Diesel
317	Intakes	Generator Sets	4	8	12	0.74	Diesel
317	Intakes	Generator Sets	1	5	23	0.74	Diesel
317	Intakes	Pumps	2	5	210	0.74	Diesel
317	Intakes	Welders	1	5	48	0.45	Diesel
319	Intakes	Cranes	7	10	240	0.29	Diesel
319	Intakes	Cranes	7	10	335	0.29	Diesel
319	Intakes	Pumps	1	9	85	0.74	Diesel
321	Intakes	Air Compressors	2	9	310	0.48	Diesel
321	Intakes	Cranes	1	9	240	0.29	Diesel
321	Intakes	Cranes	4	9	335	0.29	Diesel
321	Intakes	Generator Sets	1	9	107	0.74	Diesel
321	Intakes	Pumps	1	3	210	0.74	Diesel
321	Intakes	Welders	1	9	48	0.45	Diesel
323	Intakes	Cranes	1	4	160	0.29	Diesel
323	Intakes	Cranes	5	9	335	0.29	Diesel
325	Intakes	Air Compressors	3	9	80	0.48	Diesel
325	Intakes	Cranes	1	2	240	0.29	Diesel
325	Intakes	Cranes	1	4	335	0.29	Diesel
325	Intakes	Cranes	1	0	335	0.29	Diesel
325	Intakes	Welders	6	9	48	0.45	Diesel
327	Intakes	Air Compressors	3	8	80	0.48	Diesel
327	Intakes	Air Compressors	1	2	115	0.48	Diesel
327	Intakes	Cranes	1	0	160	0.29	Diesel
327	Intakes	Cranes	1	0	240	0.29	Diesel
327	Intakes	Cranes	1	4	335	0.29	Diesel
327	Intakes	Cranes	1	1	335	0.29	Diesel
327	Intakes	Cranes	2	6	66	0.29	Diesel
327	Intakes	Crawler Tractors	1	0	70	0.43	Diesel
327	Intakes	Generator Sets	1	0	107	0.74	Diesel
327	Intakes	Off-Highway Trucks	1	0	375	0.38	Diesel
327	Intakes	Rollers	1	0	150	0.38	Diesel
327	Intakes	Rubber Tired Loaders	1	0	197	0.36	Diesel
327	Intakes	Welders	1	2	48	0.45	Diesel
329	Intakes	Air Compressors	1	6	115	0.48	Diesel
329	Intakes	Cranes	1	6	375	0.29	Diesel
329	Intakes	Cranes	2	5	66	0.29	Diesel
329	Intakes	Crawler Tractors	1	4	24	0.43	Diesel
329	Intakes	Excavators	1	6	163	0.38	Diesel
329	Intakes	Generator Sets	2	9	12	0.74	Diesel
329	Intakes	Generator Sets	1	6	23	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
329	Intakes	Other construction equipment	1	6	325	0.42	Diesel
329	Intakes	Pumps	1	4	16	0.74	Diesel
329	Intakes	Rubber Tired Loaders	1	6	160	0.36	Diesel
329	Intakes	Welders	1	6	48	0.45	Diesel
351	Intakes	Bore/Drill Rigs	1	3	206	0.5	Diesel
353	Intakes	Crawler Tractors	5	8	310	0.43	Diesel
353	Intakes	Excavators	5	8	908	0.38	Diesel
353	Intakes	Graders	5	9	215	0.41	Diesel
353	Intakes	Off-Highway Trucks	1	2	489	0.38	Diesel
353	Intakes	Off-Highway Trucks	17	10	650	0.38	Diesel
353	Intakes	Pumps	1	1	60	0.74	Diesel
353	Intakes	Rollers	1	1	150	0.38	Diesel
353	Intakes	Rubber Tired Loaders	1	1	800	0.36	Diesel
353	Intakes	Scrapers	1	1	500	0.48	Diesel
354	Intakes	Crawler Tractors	1	2	145	0.43	Diesel
354	Intakes	Graders	2	10	215	0.41	Diesel
354	Intakes	Pavers	1	7	224	0.42	Diesel
354	Intakes	Pumps	1	6	60	0.74	Diesel
354	Intakes	Rollers	1	7	110	0.38	Diesel
354	Intakes	Rollers	1	7	131	0.38	Diesel
354	Intakes	Rollers	1	10	150	0.38	Diesel
354	Intakes	Rubber Tired Loaders	1	6	501	0.36	Diesel
354	Intakes	Scrapers	1	4	175	0.48	Diesel
354	Intakes	Scrapers	1	6	500	0.48	Diesel
354	Intakes	Tractors/Loaders/Backhoes	1	7	87	0.37	Diesel
355	Intakes	Air Compressors	1	4	115	0.48	Diesel
355	Intakes	Cranes	2	6	240	0.29	Diesel
355	Intakes	Cranes	2	9	335	0.29	Diesel
355	Intakes	Crawler Tractors	1	10	242	0.43	Diesel
355	Intakes	Excavators	1	4	384	0.38	Diesel
355	Intakes	Off-Highway Trucks	2	6	452	0.38	Diesel
355	Intakes	Other Construction Equipment	1	10	92	0.42	Diesel
355	Intakes	Pumps	1	4	210	0.74	Diesel
355	Intakes	Rollers	1	4	18	0.38	Diesel
357	Intakes	Air Compressors	2	10	310	0.48	Diesel
357	Intakes	Cranes	1	10	240	0.29	Diesel
357	Intakes	Cranes	5	10	335	0.29	Diesel
357	Intakes	Generator Sets	1	10	107	0.74	Diesel
357	Intakes	Pumps	1	6	210	0.74	Diesel
357	Intakes	Welders	1	10	48	0.45	Diesel
359	Intakes	Cranes	4	9	240	0.29	Diesel
359	Intakes	Cranes	3	7	275	0.29	Diesel
359	Intakes	Cranes	1	2	335	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
361	Intakes	Air Compressors	1	4	115	0.48	Diesel
361	Intakes	Cranes	1	3	275	0.29	Diesel
361	Intakes	Cranes	1	4	335	0.29	Diesel
361	Intakes	Cranes	1	1	335	0.29	Diesel
361	Intakes	Cranes	5	9	66	0.29	Diesel
361	Intakes	Crawler Tractors	1	9	24	0.43	Diesel
361	Intakes	Pumps	1	9	16	0.74	Diesel
361	Intakes	Welders	4	8	48	0.45	Diesel
365	Intakes	Cranes	1	3	100	0.29	Diesel
365	Intakes	Cranes	1	1	240	0.29	Diesel
365	Intakes	Cranes	2	6	335	0.29	Diesel
365	Intakes	Crawler Tractors	1	1	24	0.43	Diesel
365	Intakes	Crawler Tractors	1	1	310	0.43	Diesel
365	Intakes	Excavators	1	3	315	0.38	Diesel
365	Intakes	Excavators	1	1	384	0.38	Diesel
365	Intakes	Generator Sets	1	6	107	0.74	Diesel
365	Intakes	Off-Highway Trucks	2	6	452	0.38	Diesel
365	Intakes	Other construction equipment	1	5	325	0.42	Diesel
365	Intakes	Plate Compactors	1	2	8	0.43	Diesel
365	Intakes	Rollers	1	1	240	0.38	Diesel
365	Intakes	Rollers	1	1	150	0.38	Diesel
365	Intakes	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
365	Intakes	Welders	1	6	48	0.45	Diesel
367	Intakes	Air Compressors	1	10	310	0.48	Diesel
367	Intakes	Cranes	1	9	100	0.29	Diesel
367	Intakes	Cranes	2	10	200	0.29	Diesel
367	Intakes	Generator Sets	1	10	143	0.74	Diesel
367	Intakes	Generator Sets	2	9	107	0.74	Diesel
367	Intakes	Pumps	1	10	80	0.74	Diesel
367	Intakes	Welders	2	9	48	0.45	Diesel
369	Intakes	Cranes	1	1	240	0.29	Diesel
369	Intakes	Cranes	1	1	66	0.29	Diesel
371	Intakes	Crawler Tractors	1	2	24	0.43	Diesel
371	Intakes	Crawler Tractors	1	0	70	0.43	Diesel
371	Intakes	Crawler Tractors	2	9	145	0.43	Diesel
371	Intakes	Crawler Tractors	1	0	410	0.43	Diesel
371	Intakes	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
371	Intakes	Excavators	1	0	128	0.38	Diesel
371	Intakes	Excavators	1	9	384	0.38	Diesel
371	Intakes	Generator Sets	1	0	12	0.74	Diesel
371	Intakes	Graders	1	4	215	0.41	Diesel
371	Intakes	Off-Highway Trucks	1	5	375	0.38	Diesel
371	Intakes	Pumps	1	1	16	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
371	Intakes	Rollers	1	0	240	0.38	Diesel
371	Intakes	Rollers	1	6	315	0.38	Diesel
371	Intakes	Rollers	1	0	150	0.38	Diesel
371	Intakes	Scrapers	1	2	450	0.48	Diesel
371	Intakes	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
501	Intakes	Air Compressors	2	8	115	0.48	Diesel
501	Intakes	Cranes	2	8	240	0.29	Diesel
501	Intakes	Cranes	2	8	375	0.29	Diesel
501	Intakes	Cranes	2	8	66	0.29	Diesel
501	Intakes	Generator Sets	4	8	12	0.74	Diesel
501	Intakes	Generator Sets	2	8	23	0.74	Diesel
501	Intakes	Other construction equipment	2	8	325	0.42	Diesel
501	Intakes	Welders	2	8	48	0.45	Diesel
503	Intakes	Air Compressors	1	6	80	0.48	Diesel
503	Intakes	Cranes	1	6	160	0.29	Diesel
503	Intakes	Cranes	1	2	240	0.29	Diesel
503	Intakes	Cranes	1	0	335	0.29	Diesel
503	Intakes	Cranes	1	6	66	0.29	Diesel
503	Intakes	Crawler Tractors	1	0	242	0.43	Diesel
503	Intakes	Crawler Tractors	1	1	70	0.43	Diesel
503	Intakes	Crawler Tractors	1	0	145	0.43	Diesel
503	Intakes	Excavators	1	0	384	0.38	Diesel
503	Intakes	Generator Sets	1	1	107	0.74	Diesel
503	Intakes	Graders	1	0	158	0.41	Diesel
503	Intakes	Off-Highway Trucks	1	2	375	0.38	Diesel
503	Intakes	Off-Highway Trucks	1	1	452	0.38	Diesel
503	Intakes	Other Construction Equipment	1	0	92	0.42	Diesel
503	Intakes	Plate Compactors	1	5	8	0.43	Diesel
503	Intakes	Rollers	1	1	150	0.38	Diesel
503	Intakes	Rubber Tired Loaders	2	6	197	0.36	Diesel
503	Intakes	Tractors/Loaders/Backhoes	2	5	101	0.37	Diesel
503	Intakes	Welders	1	1	48	0.45	Diesel
505	Intakes	Bore/Drill Rigs	4	8	210	0.5	Diesel
505	Intakes	Cranes	4	8	160	0.29	Diesel
505	Intakes	Cranes	1	8	275	0.29	Diesel
505	Intakes	Crawler Tractors	1	1	70	0.43	Diesel
505	Intakes	Crawler Tractors	2	9	145	0.43	Diesel
505	Intakes	Crawler Tractors	1	0	410	0.43	Diesel
505	Intakes	Excavators	1	8	315	0.38	Diesel
505	Intakes	Excavators	1	2	384	0.38	Diesel
505	Intakes	Gas Pump	1	3	2	0.69	Gasoline
505	Intakes	Generator Sets	1	1	12	0.74	Diesel
505	Intakes	Graders	1	0	158	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
505	Intakes	Graders	1	4	215	0.41	Diesel
505	Intakes	Off-Highway Trucks	3	9	375	0.38	Diesel
505	Intakes	Off-Highway Trucks	1	2	452	0.38	Diesel
505	Intakes	Pumps	1	1	16	0.74	Diesel
505	Intakes	Pumps	1	8	60	0.74	Diesel
505	Intakes	Rollers	1	0	240	0.38	Diesel
505	Intakes	Rollers	1	5	315	0.38	Diesel
505	Intakes	Rollers	1	1	150	0.38	Diesel
505	Intakes	Rubber Tired Loaders	1	8	211	0.36	Diesel
505	Intakes	Rubber Tired Loaders	1	8	160	0.36	Diesel
505	Intakes	Rubber Tired Loaders	1	0	501	0.36	Diesel
505	Intakes	Rubber Tired Loaders	1	0	145	0.36	Diesel
505	Intakes	Scrapers	1	1	450	0.48	Diesel
505	Intakes	Scrapers	1	0	500	0.48	Diesel
505	Intakes	Tractors/Loaders/Backhoes	5	8	101	0.37	Diesel
506	Intakes	Air Compressors	1	4	115	0.48	Diesel
506	Intakes	Air Compressors	4	9	310	0.48	Diesel
506	Intakes	Cranes	3	9	240	0.29	Diesel
506	Intakes	Cranes	9	9	335	0.29	Diesel
506	Intakes	Cranes	1	4	375	0.29	Diesel
506	Intakes	Crawler Tractors	1	4	242	0.43	Diesel
506	Intakes	Excavators	1	0	128	0.38	Diesel
506	Intakes	Excavators	1	1	315	0.38	Diesel
506	Intakes	Generator Sets	1	4	23	0.74	Diesel
506	Intakes	Generator Sets	2	9	107	0.74	Diesel
506	Intakes	Other Construction Equipment	1	8	92	0.42	Diesel
506	Intakes	Other construction equipment	1	4	325	0.42	Diesel
506	Intakes	Plate Compactors	1	0	8	0.43	Diesel
506	Intakes	Pumps	1	7	210	0.74	Diesel
506	Intakes	Pumps	1	0	60	0.74	Diesel
506	Intakes	Welders	3	7	48	0.45	Diesel
507	Intakes	Air Compressors	2	16	115	0.48	Diesel
507	Intakes	Cranes	2	11	240	0.29	Diesel
507	Intakes	Cranes	2	16	375	0.29	Diesel
507	Intakes	Cranes	2	16	66	0.29	Diesel
507	Intakes	Generator Sets	2	15	12	0.74	Diesel
507	Intakes	Generator Sets	2	16	23	0.74	Diesel
507	Intakes	Other construction equipment	2	15	325	0.42	Diesel
507	Intakes	Welders	2	16	48	0.45	Diesel
509	Intakes	Crawler Tractors	1	3	24	0.43	Diesel
509	Intakes	Crawler Tractors	1	3	70	0.43	Diesel
509	Intakes	Crawler Tractors	9	9	145	0.43	Diesel
509	Intakes	Crawler Tractors	1	2	410	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
509	Intakes	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
509	Intakes	Excavators	1	1	128	0.38	Diesel
509	Intakes	Excavators	5	9	384	0.38	Diesel
509	Intakes	Generator Sets	1	1	12	0.74	Diesel
509	Intakes	Graders	3	7	215	0.41	Diesel
509	Intakes	Off-Highway Trucks	3	9	375	0.38	Diesel
509	Intakes	Off-Highway Trucks	18	10	489	0.38	Diesel
509	Intakes	Pavers	1	0	224	0.42	Diesel
509	Intakes	Pavers	1	3	230	0.42	Diesel
509	Intakes	Pavers	1	3	92	0.42	Diesel
509	Intakes	Plate Compactors	1	2	8	0.43	Diesel
509	Intakes	Pumps	1	8	16	0.74	Diesel
509	Intakes	Rollers	1	0	110	0.38	Diesel
509	Intakes	Rollers	1	0	131	0.38	Diesel
509	Intakes	Rollers	1	1	240	0.38	Diesel
509	Intakes	Rollers	3	10	315	0.38	Diesel
509	Intakes	Rollers	1	7	150	0.38	Diesel
509	Intakes	Rollers	1	3	18	0.38	Diesel
509	Intakes	Rubber Tired Loaders	1	6	197	0.36	Diesel
509	Intakes	Rubber Tired Loaders	1	2	211	0.36	Diesel
509	Intakes	Scrapers	1	7	450	0.48	Diesel
509	Intakes	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
509	Intakes	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
511	Intakes	Air Compressors	1	1	80	0.48	Diesel
511	Intakes	Cement and Mortar Mixers	2	16	18	0.56	Diesel
511	Intakes	Cranes	2	16	100	0.29	Diesel
511	Intakes	Cranes	1	1	66	0.29	Diesel
511	Intakes	Pumps	2	16	215	0.74	Diesel
511	Intakes	Tractors/Loaders/Backhoes	2	16	101	0.37	Diesel
513	Intakes	Cranes	3	7	375	0.29	Diesel
513	Intakes	Crawler Tractors	1	5	145	0.43	Diesel
513	Intakes	Crawler Tractors	2	6	310	0.43	Diesel
513	Intakes	Excavators	1	2	523	0.38	Diesel
513	Intakes	Graders	1	1	215	0.41	Diesel
513	Intakes	Off-Highway Trucks	1	10	489	0.38	Diesel
513	Intakes	Off-Highway Trucks	7	9	650	0.38	Diesel
513	Intakes	Rollers	1	5	240	0.38	Diesel
515	Intakes	Air Compressors	1	1	80	0.48	Diesel
515	Intakes	Air Compressors	1	7	115	0.48	Diesel
515	Intakes	Bore/Drill Rigs	1	7	484	0.5	Diesel
515	Intakes	Cranes	1	7	100	0.29	Diesel
515	Intakes	Cranes	1	2	240	0.29	Diesel
515	Intakes	Cranes	1	5	335	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
515	Intakes	Cranes	1	0	66	0.29	Diesel
515	Intakes	Crawler Tractors	1	7	145	0.43	Diesel
515	Intakes	Off-Highway Trucks	1	14	375	0.38	Diesel
515	Intakes	Pumps	1	7	60	0.74	Diesel
515	Intakes	Rubber Tired Loaders	1	7	160	0.36	Diesel
515	Intakes	Tractors/Loaders/Backhoes	1	7	101	0.37	Diesel
517	Intakes	Air Compressors	1	8	115	0.48	Diesel
517	Intakes	Air Compressors	2	8	310	0.48	Diesel
517	Intakes	Cranes	4	10	240	0.29	Diesel
517	Intakes	Generator Sets	5	10	12	0.74	Diesel
517	Intakes	Generator Sets	1	8	23	0.74	Diesel
517	Intakes	Pumps	2	8	210	0.74	Diesel
517	Intakes	Welders	1	8	48	0.45	Diesel
519	Intakes	Cranes	11	9	240	0.29	Diesel
519	Intakes	Cranes	11	9	335	0.29	Diesel
519	Intakes	Pumps	2	5	85	0.74	Diesel
521	Intakes	Air Compressors	2	10	310	0.48	Diesel
521	Intakes	Cranes	1	10	240	0.29	Diesel
521	Intakes	Cranes	4	10	335	0.29	Diesel
521	Intakes	Generator Sets	1	10	107	0.74	Diesel
521	Intakes	Pumps	1	3	210	0.74	Diesel
521	Intakes	Welders	1	10	48	0.45	Diesel
523	Intakes	Cranes	1	4	160	0.29	Diesel
523	Intakes	Cranes	5	8	335	0.29	Diesel
525	Intakes	Air Compressors	2	9	80	0.48	Diesel
525	Intakes	Cranes	1	1	240	0.29	Diesel
525	Intakes	Cranes	1	2	335	0.29	Diesel
525	Intakes	Cranes	1	0	335	0.29	Diesel
525	Intakes	Welders	4	9	48	0.45	Diesel
527	Intakes	Air Compressors	3	10	80	0.48	Diesel
527	Intakes	Air Compressors	1	3	115	0.48	Diesel
527	Intakes	Cranes	1	0	160	0.29	Diesel
527	Intakes	Cranes	1	0	240	0.29	Diesel
527	Intakes	Cranes	1	4	335	0.29	Diesel
527	Intakes	Cranes	1	1	335	0.29	Diesel
527	Intakes	Cranes	2	6	66	0.29	Diesel
527	Intakes	Crawler Tractors	1	0	70	0.43	Diesel
527	Intakes	Generator Sets	1	0	107	0.74	Diesel
527	Intakes	Off-Highway Trucks	1	0	375	0.38	Diesel
527	Intakes	Rollers	1	0	150	0.38	Diesel
527	Intakes	Rubber Tired Loaders	1	0	197	0.36	Diesel
527	Intakes	Welders	1	3	48	0.45	Diesel
529	Intakes	Air Compressors	1	4	115	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
529	Intakes	Cranes	1	4	375	0.29	Diesel
529	Intakes	Cranes	1	8	66	0.29	Diesel
529	Intakes	Crawler Tractors	1	4	24	0.43	Diesel
529	Intakes	Excavators	1	8	163	0.38	Diesel
529	Intakes	Generator Sets	2	5	12	0.74	Diesel
529	Intakes	Generator Sets	1	4	23	0.74	Diesel
529	Intakes	Other construction equipment	1	4	325	0.42	Diesel
529	Intakes	Pumps	1	4	16	0.74	Diesel
529	Intakes	Rubber Tired Loaders	1	8	160	0.36	Diesel
529	Intakes	Welders	1	4	48	0.45	Diesel
551	Intakes	Bore/Drill Rigs	1	4	206	0.5	Diesel
553	Intakes	Crawler Tractors	3	7	310	0.43	Diesel
553	Intakes	Excavators	3	7	908	0.38	Diesel
553	Intakes	Graders	3	7	215	0.41	Diesel
553	Intakes	Off-Highway Trucks	1	1	489	0.38	Diesel
553	Intakes	Off-Highway Trucks	9	9	650	0.38	Diesel
553	Intakes	Pumps	1	1	60	0.74	Diesel
553	Intakes	Rollers	1	1	150	0.38	Diesel
553	Intakes	Rubber Tired Loaders	1	1	800	0.36	Diesel
553	Intakes	Scrapers	1	1	500	0.48	Diesel
554	Intakes	Crawler Tractors	1	3	145	0.43	Diesel
554	Intakes	Graders	4	9	215	0.41	Diesel
554	Intakes	Pavers	2	6	224	0.42	Diesel
554	Intakes	Pumps	2	5	60	0.74	Diesel
554	Intakes	Rollers	2	6	110	0.38	Diesel
554	Intakes	Rollers	2	6	131	0.38	Diesel
554	Intakes	Rollers	2	9	150	0.38	Diesel
554	Intakes	Rubber Tired Loaders	2	5	501	0.36	Diesel
554	Intakes	Scrapers	1	8	175	0.48	Diesel
554	Intakes	Scrapers	2	5	500	0.48	Diesel
554	Intakes	Tractors/Loaders/Backhoes	2	6	87	0.37	Diesel
555	Intakes	Air Compressors	1	4	115	0.48	Diesel
555	Intakes	Cranes	2	6	240	0.29	Diesel
555	Intakes	Cranes	2	9	335	0.29	Diesel
555	Intakes	Crawler Tractors	1	10	242	0.43	Diesel
555	Intakes	Excavators	1	4	384	0.38	Diesel
555	Intakes	Off-Highway Trucks	2	6	452	0.38	Diesel
555	Intakes	Other Construction Equipment	1	10	92	0.42	Diesel
555	Intakes	Pumps	1	4	210	0.74	Diesel
555	Intakes	Rollers	1	4	18	0.38	Diesel
557	Intakes	Air Compressors	2	8	310	0.48	Diesel
557	Intakes	Cranes	1	8	240	0.29	Diesel
557	Intakes	Cranes	5	8	335	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
557	Intakes	Generator Sets	1	8	107	0.74	Diesel
557	Intakes	Pumps	1	5	210	0.74	Diesel
557	Intakes	Welders	1	8	48	0.45	Diesel
559	Intakes	Cranes	4	9	240	0.29	Diesel
559	Intakes	Cranes	3	7	275	0.29	Diesel
559	Intakes	Cranes	1	2	335	0.29	Diesel
561	Intakes	Air Compressors	1	2	115	0.48	Diesel
561	Intakes	Cranes	1	1	275	0.29	Diesel
561	Intakes	Cranes	1	2	335	0.29	Diesel
561	Intakes	Cranes	1	0	335	0.29	Diesel
561	Intakes	Cranes	2	8	66	0.29	Diesel
561	Intakes	Crawler Tractors	1	3	24	0.43	Diesel
561	Intakes	Pumps	1	3	16	0.74	Diesel
561	Intakes	Welders	2	6	48	0.45	Diesel
7004	Intermediate Forebay	Cranes	1	3	240	0.29	Diesel
7004	Intermediate Forebay	Cranes	1	3	335	0.29	Diesel
7004	Intermediate Forebay	Crawler Tractors	1	0	70	0.43	Diesel
7004	Intermediate Forebay	Crawler Tractors	1	2	145	0.43	Diesel
7004	Intermediate Forebay	Crawler Tractors	1	2	410	0.43	Diesel
7004	Intermediate Forebay	Excavators	1	0	315	0.38	Diesel
7004	Intermediate Forebay	Generator Sets	1	9	12	0.74	Diesel
7004	Intermediate Forebay	Graders	1	0	158	0.41	Diesel
7004	Intermediate Forebay	Graders	1	2	215	0.41	Diesel
7004	Intermediate Forebay	Off-Highway Trucks	1	0	452	0.38	Diesel
7004	Intermediate Forebay	Pumps	1	0	16	0.74	Diesel
7004	Intermediate Forebay	Rollers	1	0	18	0.38	Diesel
7004	Intermediate Forebay	Rollers	1	2	240	0.38	Diesel
7004	Intermediate Forebay	Rollers	1	1	150	0.38	Diesel
7004	Intermediate Forebay	Rubber Tired Loaders	1	1	211	0.36	Diesel
7004	Intermediate Forebay	Scrapers	1	7	450	0.48	Diesel
7004	Intermediate Forebay	Scrapers	1	1	500	0.48	Diesel
7004	Intermediate Forebay	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
7005	Intermediate Forebay	Air Compressors	2	6	80	0.48	Diesel
7005	Intermediate Forebay	Cranes	1	1	240	0.29	Diesel
7005	Intermediate Forebay	Cranes	1	6	275	0.29	Diesel
7005	Intermediate Forebay	Cranes	1	1	160	0.29	Diesel
7005	Intermediate Forebay	Cranes	1	6	66	0.29	Diesel
7005	Intermediate Forebay	Crawler Tractors	1	0	70	0.43	Diesel
7005	Intermediate Forebay	Crawler Tractors	1	0	145	0.43	Diesel
7005	Intermediate Forebay	Generator Sets	1	0	107	0.74	Diesel
7005	Intermediate Forebay	Graders	1	0	215	0.41	Diesel
7005	Intermediate Forebay	Off-Highway Trucks	1	1	375	0.38	Diesel
7005	Intermediate Forebay	Plate Compactors	1	2	8	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7005	Intermediate Forebay	Pumps	1	0	16	0.74	Diesel
7005	Intermediate Forebay	Rollers	1	1	150	0.38	Diesel
7005	Intermediate Forebay	Rubber Tired Loaders	1	4	197	0.36	Diesel
7005	Intermediate Forebay	Scrapers	1	1	175	0.48	Diesel
7005	Intermediate Forebay	Tractors/Loaders/Backhoes	1	3	101	0.37	Diesel
7005	Intermediate Forebay	Welders	1	0	48	0.45	Diesel
7006	Intermediate Forebay	Crawler Tractors	1	1	24	0.43	Diesel
7006	Intermediate Forebay	Generator Sets	1	1	713	0.74	Diesel
7006	Intermediate Forebay	Rubber Tired Loaders	1	2	211	0.36	Diesel
7006	Intermediate Forebay	Welders	1	0	48	0.45	Diesel
7007	Intermediate Forebay	Graders	1	0	158	0.41	Diesel
7007	Intermediate Forebay	Rollers	1	0	150	0.38	Diesel
7007	Intermediate Forebay	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
7010	Intermediate Forebay	Air Compressors	1	2	115	0.48	Diesel
7010	Intermediate Forebay	Cranes	1	2	240	0.29	Diesel
7010	Intermediate Forebay	Cranes	1	4	275	0.29	Diesel
7010	Intermediate Forebay	Cranes	1	2	335	0.29	Diesel
7010	Intermediate Forebay	Cranes	1	2	66	0.29	Diesel
7010	Intermediate Forebay	Crawler Tractors	1	0	70	0.43	Diesel
7010	Intermediate Forebay	Crawler Tractors	2	8	145	0.43	Diesel
7010	Intermediate Forebay	Crawler Tractors	3	10	310	0.43	Diesel
7010	Intermediate Forebay	Excavators	1	4	523	0.38	Diesel
7010	Intermediate Forebay	Excavators	1	0	315	0.38	Diesel
7010	Intermediate Forebay	Excavators	1	9	384	0.38	Diesel
7010	Intermediate Forebay	Excavators	2	7	908	0.38	Diesel
7010	Intermediate Forebay	Excavators	1	2	163	0.38	Diesel
7010	Intermediate Forebay	Gas Pump	1	2	2	0.69	Gasoline
7010	Intermediate Forebay	Generator Sets	1	2	23	0.74	Diesel
7010	Intermediate Forebay	Generator Sets	10	9	12	0.74	Diesel
7010	Intermediate Forebay	Graders	3	10	215	0.41	Diesel
7010	Intermediate Forebay	Off-Highway Trucks	1	2	650	0.38	Diesel
7010	Intermediate Forebay	Off-Highway Trucks	6	10	1,000	0.38	Diesel
7010	Intermediate Forebay	Off-Highway Trucks	2	7	375	0.38	Diesel
7010	Intermediate Forebay	Off-Highway Trucks	3	8	489	0.38	Diesel
7010	Intermediate Forebay	Off-Highway Trucks	1	0	489	0.38	Diesel
7010	Intermediate Forebay	Other construction equipment	1	2	325	0.42	Diesel
7010	Intermediate Forebay	Pumps	1	2	16	0.74	Diesel
7010	Intermediate Forebay	Pumps	1	4	60	0.74	Diesel
7010	Intermediate Forebay	Rollers	2	8	315	0.38	Diesel
7010	Intermediate Forebay	Rollers	1	2	150	0.38	Diesel
7010	Intermediate Forebay	Rubber Tired Loaders	1	8	160	0.36	Diesel
7010	Intermediate Forebay	Rubber Tired Loaders	1	0	145	0.36	Diesel
7010	Intermediate Forebay	Rubber Tired Loaders	1	0	250	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7010	Intermediate Forebay	Scrapers	1	1	175	0.48	Diesel
7010	Intermediate Forebay	Scrapers	1	1	450	0.48	Diesel
7010	Intermediate Forebay	Scrapers	1	6	500	0.48	Diesel
7010	Intermediate Forebay	Tractors/Loaders/Backhoes	1	4	101	0.37	Diesel
7010	Intermediate Forebay	Welders	1	2	48	0.45	Diesel
7020	Intermediate Forebay	Bore/Drill Rigs	1	2	206	0.5	Diesel
7020	Intermediate Forebay	Crawler Tractors	1	0	145	0.43	Diesel
7020	Intermediate Forebay	Excavators	1	0	384	0.38	Diesel
7020	Intermediate Forebay	Graders	1	0	158	0.41	Diesel
7020	Intermediate Forebay	Off-Highway Trucks	1	1	489	0.38	Diesel
7022	Intermediate Forebay	Bore/Drill Rigs	1	9	210	0.5	Diesel
7022	Intermediate Forebay	Cranes	1	9	160	0.29	Diesel
7022	Intermediate Forebay	Tractors/Loaders/Backhoes	1	9	101	0.37	Diesel
7035	Intermediate Forebay	Air Compressors	1	2	500	0.48	Diesel
7035	Intermediate Forebay	Cranes	1	1	275	0.29	Diesel
7035	Intermediate Forebay	Cranes	1	2	375	0.29	Diesel
7035	Intermediate Forebay	Generator Sets	1	2	143	0.74	Diesel
7035	Intermediate Forebay	Pumps	1	3	80	0.74	Diesel
7035	Intermediate Forebay	Pumps	1	3	210	0.74	Diesel
7035	Intermediate Forebay	Welders	1	4	48	0.45	Diesel
7040	Intermediate Forebay	Air Compressors	1	0	115	0.48	Diesel
7040	Intermediate Forebay	Cranes	1	4	275	0.29	Diesel
7040	Intermediate Forebay	Cranes	1	0	335	0.29	Diesel
7040	Intermediate Forebay	Welders	1	0	48	0.45	Diesel
7050	Intermediate Forebay	Bore/Drill Rigs	1	2	206	0.5	Diesel
7050	Intermediate Forebay	Crawler Tractors	1	1	145	0.43	Diesel
7050	Intermediate Forebay	Excavators	1	1	384	0.38	Diesel
7050	Intermediate Forebay	Graders	1	0	158	0.41	Diesel
7050	Intermediate Forebay	Off-Highway Trucks	1	3	489	0.38	Diesel
7052	Intermediate Forebay	Bore/Drill Rigs	2	5	210	0.5	Diesel
7052	Intermediate Forebay	Cranes	2	5	160	0.29	Diesel
7052	Intermediate Forebay	Tractors/Loaders/Backhoes	2	5	101	0.37	Diesel
7065	Intermediate Forebay	Air Compressors	1	1	500	0.48	Diesel
7065	Intermediate Forebay	Cranes	1	1	275	0.29	Diesel
7065	Intermediate Forebay	Cranes	1	1	375	0.29	Diesel
7065	Intermediate Forebay	Generator Sets	1	1	143	0.74	Diesel
7065	Intermediate Forebay	Pumps	1	2	80	0.74	Diesel
7065	Intermediate Forebay	Pumps	1	2	210	0.74	Diesel
7065	Intermediate Forebay	Welders	1	2	48	0.45	Diesel
7070	Intermediate Forebay	Air Compressors	1	0	115	0.48	Diesel
7070	Intermediate Forebay	Cranes	1	4	275	0.29	Diesel
7070	Intermediate Forebay	Cranes	1	0	335	0.29	Diesel
7070	Intermediate Forebay	Welders	1	0	48	0.45	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
9999	Permeant Power	Cranes	1	8	285	0.29	Diesel
1020	Reach 7/Combined Pump Plant	Cranes	1	8	175	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Air Compressors	1	8	80	0.48	Diesel
1030	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	1	13	18	0.56	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	1	13	100	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	1	20	240	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	1	20	275	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	1	19	335	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	2	17	335	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Cranes	1	4	66	0.29	Diesel
1030	Reach 7/Combined Pump Plant	Crawler Tractors	1	20	145	0.43	Diesel
1030	Reach 7/Combined Pump Plant	Off-Highway Trucks	4	20	375	0.38	Diesel
1030	Reach 7/Combined Pump Plant	Pumps	1	13	215	0.74	Diesel
1030	Reach 7/Combined Pump Plant	Pumps	1	20	60	0.74	Diesel
1030	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	20	160	0.36	Diesel
1030	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	16	101	0.37	Diesel
1040	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1040	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
1050	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1060	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1090	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1100	Reach 7/Combined Pump Plant	Cranes	29	24	360	0.29	Diesel
1140	Reach 7/Combined Pump Plant	Air Compressors	1	2	80	0.48	Diesel
1140	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	1	19	18	0.56	Diesel
1140	Reach 7/Combined Pump Plant	Cranes	1	19	100	0.29	Diesel
1140	Reach 7/Combined Pump Plant	Cranes	1	1	66	0.29	Diesel
1140	Reach 7/Combined Pump Plant	Pumps	1	19	215	0.74	Diesel
1140	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	19	101	0.37	Diesel
1150	Reach 7/Combined Pump Plant	Cranes	1	3	360	0.29	Diesel
1150	Reach 7/Combined Pump Plant	Cranes	1	3	175	0.29	Diesel
1150	Reach 7/Combined Pump Plant	Crawler Tractors	1	3	335	0.43	Diesel
1150	Reach 7/Combined Pump Plant	Excavators	1	3	165	0.38	Diesel
1150	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	100	0.36	Diesel
1150	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	375	0.36	Diesel
1150	Reach 7/Combined Pump Plant	Welders	1	24	46	0.45	Diesel
1280	Reach 7/Combined Pump Plant	Cranes	2	13	360	0.29	Diesel
1280	Reach 7/Combined Pump Plant	Rubber Tired Loaders	2	12	375	0.36	Diesel
1280	Reach 7/Combined Pump Plant	Welders	2	12	46	0.45	Diesel
1290	Reach 7/Combined Pump Plant	Cranes	1	22	360	0.29	Diesel
1300	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1320	Reach 7/Combined Pump Plant	Cranes	1	21	360	0.29	Diesel
1330	Reach 7/Combined Pump Plant	Cranes	1	8	360	0.29	Diesel
1340	Reach 7/Combined Pump Plant	Cranes	2	19	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1340	Reach 7/Combined Pump Plant	Crawler Tractors	2	24	110	0.43	Diesel
1340	Reach 7/Combined Pump Plant	Excavators	2	24	165	0.38	Diesel
1340	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
1360	Reach 7/Combined Pump Plant	Cranes	1	22	360	0.29	Diesel
1370	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1380	Reach 7/Combined Pump Plant	Cranes	1	8	360	0.29	Diesel
1480	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1480	Reach 7/Combined Pump Plant	Crawler Tractors	2	23	82	0.43	Diesel
1480	Reach 7/Combined Pump Plant	Excavators	1	23	165	0.38	Diesel
1480	Reach 7/Combined Pump Plant	Other construction equipment	2	23	6	0.42	Diesel
1480	Reach 7/Combined Pump Plant	Rollers	1	23	240	0.38	Diesel
1510	Reach 7/Combined Pump Plant	Cranes	1	8	175	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Air Compressors	1	8	80	0.48	Diesel
1520	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	1	13	18	0.56	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	1	13	100	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	1	20	240	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	1	20	275	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	1	19	335	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	2	17	335	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Cranes	1	4	66	0.29	Diesel
1520	Reach 7/Combined Pump Plant	Crawler Tractors	1	20	145	0.43	Diesel
1520	Reach 7/Combined Pump Plant	Off-Highway Trucks	4	20	375	0.38	Diesel
1520	Reach 7/Combined Pump Plant	Pumps	1	13	215	0.74	Diesel
1520	Reach 7/Combined Pump Plant	Pumps	1	20	60	0.74	Diesel
1520	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	20	160	0.36	Diesel
1520	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	16	101	0.37	Diesel
1530	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	1	19	18	0.56	Diesel
1530	Reach 7/Combined Pump Plant	Cranes	2	20	100	0.29	Diesel
1530	Reach 7/Combined Pump Plant	Pumps	2	20	215	0.74	Diesel
1530	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
1540	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1540	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
1550	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1560	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1590	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1600	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1610	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1620	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1630	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1640	Reach 7/Combined Pump Plant	Cranes	1	8	360	0.29	Diesel
1650	Reach 7/Combined Pump Plant	Cranes	1	3	175	0.29	Diesel
1650	Reach 7/Combined Pump Plant	Crawler Tractors	1	3	335	0.43	Diesel
1650	Reach 7/Combined Pump Plant	Excavators	1	3	165	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1650	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	100	0.36	Diesel
1650	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	375	0.36	Diesel
1660	Reach 7/Combined Pump Plant	Cranes	1	22	360	0.29	Diesel
1670	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1690	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1700	Reach 7/Combined Pump Plant	Cranes	2	17	360	0.29	Diesel
1710	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1710	Reach 7/Combined Pump Plant	Crawler Tractors	2	24	110	0.43	Diesel
1710	Reach 7/Combined Pump Plant	Excavators	2	24	165	0.38	Diesel
1710	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
1720	Reach 7/Combined Pump Plant	Cranes	2	12	360	0.29	Diesel
1730	Reach 7/Combined Pump Plant	Cranes	1	11	360	0.29	Diesel
1740	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
1750	Reach 7/Combined Pump Plant	Cranes	1	8	360	0.29	Diesel
1880	Reach 7/Combined Pump Plant	Cranes	2	13	360	0.29	Diesel
1880	Reach 7/Combined Pump Plant	Rubber Tired Loaders	2	12	375	0.36	Diesel
1880	Reach 7/Combined Pump Plant	Welders	2	13	46	0.45	Diesel
1890	Reach 7/Combined Pump Plant	Cranes	1	18	360	0.29	Diesel
1890	Reach 7/Combined Pump Plant	Crawler Tractors	1	8	82	0.43	Diesel
1890	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	8	65	0.36	Diesel
1890	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	18	200	0.36	Diesel
1890	Reach 7/Combined Pump Plant	Welders	1	18	46	0.45	Diesel
1970	Reach 7/Combined Pump Plant	Air Compressors	1	6	80	0.48	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	16	100	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	11	240	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	11	275	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	11	335	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Cranes	1	3	66	0.29	Diesel
1970	Reach 7/Combined Pump Plant	Crawler Tractors	1	11	145	0.43	Diesel
1970	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	23	375	0.38	Diesel
1970	Reach 7/Combined Pump Plant	Pumps	1	16	215	0.74	Diesel
1970	Reach 7/Combined Pump Plant	Pumps	1	11	60	0.74	Diesel
1970	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	11	160	0.36	Diesel
1970	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	14	101	0.37	Diesel
1980	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
1980	Reach 7/Combined Pump Plant	Crawler Tractors	1	24	80	0.43	Diesel
1980	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
1980	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	24	65	0.37	Diesel
1990	Reach 7/Combined Pump Plant	Cranes	1	22	360	0.29	Diesel
1990	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	22	200	0.36	Diesel
1990	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	22	65	0.37	Diesel
2000	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2010	Reach 7/Combined Pump Plant	Crawler Tractors	1	14	335	0.43	Diesel
2010	Reach 7/Combined Pump Plant	Graders	1	14	200	0.41	Diesel
2010	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	14	450	0.38	Diesel
2010	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	14	450	0.38	Diesel
2010	Reach 7/Combined Pump Plant	Rollers	2	14	240	0.38	Diesel
2010	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	14	375	0.36	Diesel
2020	Reach 7/Combined Pump Plant	Air Compressors	1	6	80	0.48	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	16	100	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	11	240	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	11	275	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	11	335	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Cranes	1	3	66	0.29	Diesel
2020	Reach 7/Combined Pump Plant	Crawler Tractors	1	11	145	0.43	Diesel
2020	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	23	375	0.38	Diesel
2020	Reach 7/Combined Pump Plant	Pumps	1	16	215	0.74	Diesel
2020	Reach 7/Combined Pump Plant	Pumps	1	11	60	0.74	Diesel
2020	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	11	160	0.36	Diesel
2020	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	14	101	0.37	Diesel
2021	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2021	Reach 7/Combined Pump Plant	Crawler Tractors	1	24	80	0.43	Diesel
2021	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	24	200	0.36	Diesel
2021	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	24	65	0.37	Diesel
2022	Reach 7/Combined Pump Plant	Cranes	1	22	360	0.29	Diesel
2022	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	22	200	0.36	Diesel
2022	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	22	65	0.37	Diesel
2023	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2033	Reach 7/Combined Pump Plant	Air Compressors	1	1	80	0.48	Diesel
2033	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	20	18	0.56	Diesel
2033	Reach 7/Combined Pump Plant	Cranes	2	20	100	0.29	Diesel
2033	Reach 7/Combined Pump Plant	Cranes	1	0	66	0.29	Diesel
2033	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	145	0.43	Diesel
2033	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2033	Reach 7/Combined Pump Plant	Graders	1	0	215	0.41	Diesel
2033	Reach 7/Combined Pump Plant	Pumps	2	20	215	0.74	Diesel
2033	Reach 7/Combined Pump Plant	Pumps	1	0	16	0.74	Diesel
2033	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2033	Reach 7/Combined Pump Plant	Scrapers	1	0	175	0.48	Diesel
2033	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
2040	Reach 7/Combined Pump Plant	Air Compressors	1	0	78	0.48	Diesel
2040	Reach 7/Combined Pump Plant	Cranes	1	6	360	0.29	Diesel
2040	Reach 7/Combined Pump Plant	Cranes	1	8	175	0.29	Diesel
2040	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	335	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2040	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	0	100	0.36	Diesel
2040	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	8	200	0.36	Diesel
2040	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	6	375	0.36	Diesel
2040	Reach 7/Combined Pump Plant	Welders	1	0	46	0.45	Diesel
2043	Reach 7/Combined Pump Plant	Air Compressors	1	3	80	0.48	Diesel
2043	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	2	22	100	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	1	13	240	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	1	13	275	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Cranes	1	1	66	0.29	Diesel
2043	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
2043	Reach 7/Combined Pump Plant	Crawler Tractors	1	19	145	0.43	Diesel
2043	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	410	0.43	Diesel
2043	Reach 7/Combined Pump Plant	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2043	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Excavators	1	0	315	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Excavators	1	2	384	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Gas Pump	1	1	2	0.69	Gasoline
2043	Reach 7/Combined Pump Plant	Generator Sets	1	0	12	0.74	Diesel
2043	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
2043	Reach 7/Combined Pump Plant	Graders	1	1	215	0.41	Diesel
2043	Reach 7/Combined Pump Plant	Off-Highway Trucks	3	18	375	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	1	452	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Pumps	2	22	215	0.74	Diesel
2043	Reach 7/Combined Pump Plant	Pumps	1	0	16	0.74	Diesel
2043	Reach 7/Combined Pump Plant	Pumps	1	14	60	0.74	Diesel
2043	Reach 7/Combined Pump Plant	Rollers	1	0	240	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Rollers	1	2	315	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2043	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	13	160	0.36	Diesel
2043	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	0	145	0.36	Diesel
2043	Reach 7/Combined Pump Plant	Scrapers	1	0	175	0.48	Diesel
2043	Reach 7/Combined Pump Plant	Scrapers	1	0	450	0.48	Diesel
2043	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2053	Reach 7/Combined Pump Plant	Cranes	1	21	360	0.29	Diesel
2053	Reach 7/Combined Pump Plant	Cranes	1	2	175	0.29	Diesel
2053	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	21	200	0.36	Diesel
2060	Reach 7/Combined Pump Plant	Crawler Tractors	2	6	70	0.43	Diesel
2060	Reach 7/Combined Pump Plant	Crawler Tractors	8	9	145	0.43	Diesel
2060	Reach 7/Combined Pump Plant	Crawler Tractors	2	6	410	0.43	Diesel
2060	Reach 7/Combined Pump Plant	Excavators	2	10	523	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2060	Reach 7/Combined Pump Plant	Excavators	1	5	384	0.38	Diesel
2060	Reach 7/Combined Pump Plant	Gas Pump	8	9	2	0.69	Gasoline
2060	Reach 7/Combined Pump Plant	Generator Sets	10	10	12	0.74	Diesel
2060	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
2060	Reach 7/Combined Pump Plant	Graders	3	8	215	0.41	Diesel
2060	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	8	452	0.38	Diesel
2060	Reach 7/Combined Pump Plant	Off-Highway Trucks	6	10	650	0.38	Diesel
2060	Reach 7/Combined Pump Plant	Pumps	1	4	16	0.74	Diesel
2060	Reach 7/Combined Pump Plant	Rollers	2	10	315	0.38	Diesel
2060	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
2060	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	9	145	0.36	Diesel
2060	Reach 7/Combined Pump Plant	Scrapers	4	9	450	0.48	Diesel
2060	Reach 7/Combined Pump Plant	Scrapers	1	4	500	0.48	Diesel
2063	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2063	Reach 7/Combined Pump Plant	Pumps	1	10	210	0.74	Diesel
2070	Reach 7/Combined Pump Plant	Crawler Tractors	2	6	24	0.43	Diesel
2070	Reach 7/Combined Pump Plant	Crawler Tractors	2	10	145	0.43	Diesel
2070	Reach 7/Combined Pump Plant	Crawler Tractors	2	10	410	0.43	Diesel
2070	Reach 7/Combined Pump Plant	Graders	1	10	215	0.41	Diesel
2070	Reach 7/Combined Pump Plant	Rollers	2	10	240	0.38	Diesel
2070	Reach 7/Combined Pump Plant	Scrapers	10	10	450	0.48	Diesel
2070	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
2073	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
2073	Reach 7/Combined Pump Plant	Crawler Tractors	2	19	82	0.43	Diesel
2073	Reach 7/Combined Pump Plant	Excavators	1	22	165	0.38	Diesel
2073	Reach 7/Combined Pump Plant	Other construction equipment	2	19	6	0.42	Diesel
2073	Reach 7/Combined Pump Plant	Pumps	1	2	210	0.74	Diesel
2073	Reach 7/Combined Pump Plant	Rollers	1	22	240	0.38	Diesel
2083	Reach 7/Combined Pump Plant	Cranes	1	21	360	0.29	Diesel
2083	Reach 7/Combined Pump Plant	Cranes	1	2	175	0.29	Diesel
2083	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	21	200	0.36	Diesel
2090	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
2090	Reach 7/Combined Pump Plant	Crawler Tractors	2	23	82	0.43	Diesel
2090	Reach 7/Combined Pump Plant	Excavators	1	23	165	0.38	Diesel
2090	Reach 7/Combined Pump Plant	Other construction equipment	2	23	6	0.42	Diesel
2090	Reach 7/Combined Pump Plant	Rollers	1	23	240	0.38	Diesel
2093	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2093	Reach 7/Combined Pump Plant	Pumps	1	10	210	0.74	Diesel
2103	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
2103	Reach 7/Combined Pump Plant	Crawler Tractors	2	19	82	0.43	Diesel
2103	Reach 7/Combined Pump Plant	Excavators	1	22	165	0.38	Diesel
2103	Reach 7/Combined Pump Plant	Other construction equipment	2	19	6	0.42	Diesel
2103	Reach 7/Combined Pump Plant	Pumps	1	2	210	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2103	Reach 7/Combined Pump Plant	Rollers	1	22	240	0.38	Diesel
2110	Reach 7/Combined Pump Plant	Cranes	1	18	360	0.29	Diesel
2110	Reach 7/Combined Pump Plant	Crawler Tractors	1	8	82	0.43	Diesel
2110	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	8	65	0.36	Diesel
2110	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	18	200	0.36	Diesel
2110	Reach 7/Combined Pump Plant	Welders	1	18	46	0.45	Diesel
2113	Reach 7/Combined Pump Plant	Crawler Tractors	1	9	24	0.43	Diesel
2113	Reach 7/Combined Pump Plant	Crawler Tractors	2	5	145	0.43	Diesel
2113	Reach 7/Combined Pump Plant	Excavators	1	5	384	0.38	Diesel
2113	Reach 7/Combined Pump Plant	Graders	1	3	215	0.41	Diesel
2113	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
2113	Reach 7/Combined Pump Plant	Rollers	1	5	315	0.38	Diesel
2113	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	5	87	0.37	Diesel
2123	Reach 7/Combined Pump Plant	Air Compressors	1	1	80	0.48	Diesel
2123	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	20	18	0.56	Diesel
2123	Reach 7/Combined Pump Plant	Cranes	2	20	100	0.29	Diesel
2123	Reach 7/Combined Pump Plant	Cranes	1	0	66	0.29	Diesel
2123	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	145	0.43	Diesel
2123	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2123	Reach 7/Combined Pump Plant	Graders	1	0	215	0.41	Diesel
2123	Reach 7/Combined Pump Plant	Pumps	2	20	215	0.74	Diesel
2123	Reach 7/Combined Pump Plant	Pumps	1	0	16	0.74	Diesel
2123	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2123	Reach 7/Combined Pump Plant	Scrapers	1	0	175	0.48	Diesel
2123	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
2133	Reach 7/Combined Pump Plant	Air Compressors	1	3	80	0.48	Diesel
2133	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	2	22	100	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	1	13	240	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	1	13	275	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	1	13	335	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Cranes	1	1	66	0.29	Diesel
2133	Reach 7/Combined Pump Plant	Crawler Tractors	1	2	24	0.43	Diesel
2133	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
2133	Reach 7/Combined Pump Plant	Crawler Tractors	1	19	145	0.43	Diesel
2133	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	410	0.43	Diesel
2133	Reach 7/Combined Pump Plant	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2133	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Excavators	1	0	315	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Excavators	1	3	384	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Gas Pump	1	1	2	0.69	Gasoline
2133	Reach 7/Combined Pump Plant	Generator Sets	1	2	12	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2133	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
2133	Reach 7/Combined Pump Plant	Graders	1	2	215	0.41	Diesel
2133	Reach 7/Combined Pump Plant	Off-Highway Trucks	3	18	375	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Pumps	2	22	215	0.74	Diesel
2133	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
2133	Reach 7/Combined Pump Plant	Pumps	1	14	60	0.74	Diesel
2133	Reach 7/Combined Pump Plant	Rollers	1	1	240	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Rollers	1	2	315	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Rollers	1	0	18	0.38	Diesel
2133	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	13	160	0.36	Diesel
2133	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	0	145	0.36	Diesel
2133	Reach 7/Combined Pump Plant	Scrapers	1	0	450	0.48	Diesel
2133	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
2133	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2153	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2153	Reach 7/Combined Pump Plant	Pumps	1	10	210	0.74	Diesel
2173	Reach 7/Combined Pump Plant	Cranes	2	16	360	0.29	Diesel
2173	Reach 7/Combined Pump Plant	Cranes	1	3	175	0.29	Diesel
2173	Reach 7/Combined Pump Plant	Rubber Tired Loaders	2	16	200	0.36	Diesel
2183	Reach 7/Combined Pump Plant	Cranes	1	24	360	0.29	Diesel
2183	Reach 7/Combined Pump Plant	Pumps	1	10	210	0.74	Diesel
2213	Reach 7/Combined Pump Plant	Air Compressors	1	1	80	0.48	Diesel
2213	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2213	Reach 7/Combined Pump Plant	Cranes	2	19	100	0.29	Diesel
2213	Reach 7/Combined Pump Plant	Cranes	1	0	66	0.29	Diesel
2213	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	145	0.43	Diesel
2213	Reach 7/Combined Pump Plant	Excavators	1	1	128	0.38	Diesel
2213	Reach 7/Combined Pump Plant	Graders	1	1	215	0.41	Diesel
2213	Reach 7/Combined Pump Plant	Pumps	2	19	215	0.74	Diesel
2213	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
2213	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
2213	Reach 7/Combined Pump Plant	Scrapers	1	1	175	0.48	Diesel
2213	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2253	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
2253	Reach 7/Combined Pump Plant	Crawler Tractors	2	19	82	0.43	Diesel
2253	Reach 7/Combined Pump Plant	Excavators	1	22	165	0.38	Diesel
2253	Reach 7/Combined Pump Plant	Other construction equipment	2	19	6	0.42	Diesel
2253	Reach 7/Combined Pump Plant	Pumps	1	2	210	0.74	Diesel
2253	Reach 7/Combined Pump Plant	Rollers	1	22	240	0.38	Diesel
2283	Reach 7/Combined Pump Plant	Cranes	1	23	360	0.29	Diesel
2283	Reach 7/Combined Pump Plant	Crawler Tractors	2	19	82	0.43	Diesel
2283	Reach 7/Combined Pump Plant	Excavators	1	22	165	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2283	Reach 7/Combined Pump Plant	Other construction equipment	2	19	6	0.42	Diesel
2283	Reach 7/Combined Pump Plant	Pumps	1	2	210	0.74	Diesel
2283	Reach 7/Combined Pump Plant	Rollers	1	22	240	0.38	Diesel
2303	Reach 7/Combined Pump Plant	Air Compressors	1	1	80	0.48	Diesel
2303	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	20	18	0.56	Diesel
2303	Reach 7/Combined Pump Plant	Cranes	2	20	100	0.29	Diesel
2303	Reach 7/Combined Pump Plant	Cranes	1	0	66	0.29	Diesel
2303	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	145	0.43	Diesel
2303	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2303	Reach 7/Combined Pump Plant	Graders	1	0	215	0.41	Diesel
2303	Reach 7/Combined Pump Plant	Pumps	2	20	215	0.74	Diesel
2303	Reach 7/Combined Pump Plant	Pumps	1	0	16	0.74	Diesel
2303	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2303	Reach 7/Combined Pump Plant	Scrapers	1	0	175	0.48	Diesel
2303	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
2313	Reach 7/Combined Pump Plant	Air Compressors	1	3	80	0.48	Diesel
2313	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	17	18	0.56	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	2	17	100	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	1	16	240	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	1	16	275	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	1	16	335	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	1	16	335	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Cranes	1	1	66	0.29	Diesel
2313	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	70	0.43	Diesel
2313	Reach 7/Combined Pump Plant	Crawler Tractors	2	13	145	0.43	Diesel
2313	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	410	0.43	Diesel
2313	Reach 7/Combined Pump Plant	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2313	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Excavators	1	0	315	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Excavators	1	4	384	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Gas Pump	1	1	2	0.69	Gasoline
2313	Reach 7/Combined Pump Plant	Generator Sets	1	1	12	0.74	Diesel
2313	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
2313	Reach 7/Combined Pump Plant	Graders	1	2	215	0.41	Diesel
2313	Reach 7/Combined Pump Plant	Off-Highway Trucks	3	22	375	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Pumps	2	17	215	0.74	Diesel
2313	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
2313	Reach 7/Combined Pump Plant	Pumps	1	16	60	0.74	Diesel
2313	Reach 7/Combined Pump Plant	Rollers	1	0	240	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Rollers	1	3	315	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Rollers	1	0	18	0.38	Diesel
2313	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	16	160	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2313	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	0	145	0.36	Diesel
2313	Reach 7/Combined Pump Plant	Scrapers	1	1	450	0.48	Diesel
2313	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2313	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	3	17	101	0.37	Diesel
2323	Reach 7/Combined Pump Plant	Cranes	2	17	360	0.29	Diesel
2323	Reach 7/Combined Pump Plant	Cranes	1	1	175	0.29	Diesel
2323	Reach 7/Combined Pump Plant	Pumps	1	6	210	0.74	Diesel
2323	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	19	200	0.36	Diesel
2343	Reach 7/Combined Pump Plant	Cranes	1	19	360	0.29	Diesel
2343	Reach 7/Combined Pump Plant	Cranes	1	1	175	0.29	Diesel
2343	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	19	200	0.36	Diesel
2353	Reach 7/Combined Pump Plant	Cranes	2	15	360	0.29	Diesel
2353	Reach 7/Combined Pump Plant	Pumps	1	13	210	0.74	Diesel
2363	Reach 7/Combined Pump Plant	Air Compressors	1	1	80	0.48	Diesel
2363	Reach 7/Combined Pump Plant	Cement and Mortar Mixers	2	20	18	0.56	Diesel
2363	Reach 7/Combined Pump Plant	Cranes	2	20	100	0.29	Diesel
2363	Reach 7/Combined Pump Plant	Cranes	1	0	66	0.29	Diesel
2363	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	70	0.43	Diesel
2363	Reach 7/Combined Pump Plant	Crawler Tractors	1	2	145	0.43	Diesel
2363	Reach 7/Combined Pump Plant	Excavators	1	0	315	0.38	Diesel
2363	Reach 7/Combined Pump Plant	Excavators	1	2	384	0.38	Diesel
2363	Reach 7/Combined Pump Plant	Generator Sets	1	7	12	0.74	Diesel
2363	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
2363	Reach 7/Combined Pump Plant	Graders	1	2	215	0.41	Diesel
2363	Reach 7/Combined Pump Plant	Pumps	2	20	215	0.74	Diesel
2363	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
2363	Reach 7/Combined Pump Plant	Rollers	1	2	240	0.38	Diesel
2363	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
2363	Reach 7/Combined Pump Plant	Rollers	1	0	18	0.38	Diesel
2363	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2363	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
7510	Reach 7/Combined Pump Plant	Cranes	2	7	240	0.29	Diesel
7510	Reach 7/Combined Pump Plant	Cranes	2	7	335	0.29	Diesel
7510	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	70	0.43	Diesel
7510	Reach 7/Combined Pump Plant	Crawler Tractors	2	6	145	0.43	Diesel
7510	Reach 7/Combined Pump Plant	Crawler Tractors	1	9	410	0.43	Diesel
7510	Reach 7/Combined Pump Plant	Excavators	1	0	315	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Generator Sets	4	9	12	0.74	Diesel
7510	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
7510	Reach 7/Combined Pump Plant	Graders	1	10	215	0.41	Diesel
7510	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	1	452	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Pavers	1	2	224	0.42	Diesel
7510	Reach 7/Combined Pump Plant	Pumps	1	4	16	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7510	Reach 7/Combined Pump Plant	Rollers	1	2	110	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Rollers	1	2	131	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Rollers	1	9	240	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Rollers	1	5	150	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Rollers	1	1	18	0.38	Diesel
7510	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	211	0.36	Diesel
7510	Reach 7/Combined Pump Plant	Scrapers	1	5	175	0.48	Diesel
7510	Reach 7/Combined Pump Plant	Scrapers	3	9	450	0.48	Diesel
7510	Reach 7/Combined Pump Plant	Scrapers	1	4	500	0.48	Diesel
7510	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
7512	Reach 7/Combined Pump Plant	Air Compressors	2	8	80	0.48	Diesel
7512	Reach 7/Combined Pump Plant	Cranes	1	1	160	0.29	Diesel
7512	Reach 7/Combined Pump Plant	Cranes	1	2	240	0.29	Diesel
7512	Reach 7/Combined Pump Plant	Cranes	1	6	275	0.29	Diesel
7512	Reach 7/Combined Pump Plant	Cranes	1	8	66	0.29	Diesel
7512	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
7512	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	145	0.43	Diesel
7512	Reach 7/Combined Pump Plant	Generator Sets	1	1	107	0.74	Diesel
7512	Reach 7/Combined Pump Plant	Graders	1	1	215	0.41	Diesel
7512	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	2	375	0.38	Diesel
7512	Reach 7/Combined Pump Plant	Plate Compactors	1	2	8	0.43	Diesel
7512	Reach 7/Combined Pump Plant	Pumps	1	1	16	0.74	Diesel
7512	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7512	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	5	197	0.36	Diesel
7512	Reach 7/Combined Pump Plant	Scrapers	1	1	175	0.48	Diesel
7512	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	4	101	0.37	Diesel
7512	Reach 7/Combined Pump Plant	Welders	1	1	48	0.45	Diesel
7516	Reach 7/Combined Pump Plant	Crawler Tractors	1	8	24	0.43	Diesel
7516	Reach 7/Combined Pump Plant	Generator Sets	1	8	713	0.74	Diesel
7516	Reach 7/Combined Pump Plant	Pumps	1	5	210	0.74	Diesel
7516	Reach 7/Combined Pump Plant	Rubber Tired Loaders	2	8	211	0.36	Diesel
7516	Reach 7/Combined Pump Plant	Welders	1	2	48	0.45	Diesel
7517	Reach 7/Combined Pump Plant	Graders	1	1	158	0.41	Diesel
7517	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7517	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	4	87	0.37	Diesel
7518	Reach 7/Combined Pump Plant	Graders	1	1	158	0.41	Diesel
7518	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7518	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	2	4	87	0.37	Diesel
7520	Reach 7/Combined Pump Plant	Air Compressors	7	10	115	0.48	Diesel
7520	Reach 7/Combined Pump Plant	Cranes	5	8	240	0.29	Diesel
7520	Reach 7/Combined Pump Plant	Cranes	7	10	375	0.29	Diesel
7520	Reach 7/Combined Pump Plant	Cranes	7	10	66	0.29	Diesel
7520	Reach 7/Combined Pump Plant	Generator Sets	9	9	12	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7520	Reach 7/Combined Pump Plant	Generator Sets	7	10	23	0.74	Diesel
7520	Reach 7/Combined Pump Plant	Other construction equipment	7	10	325	0.42	Diesel
7520	Reach 7/Combined Pump Plant	Welders	7	10	48	0.45	Diesel
7522	Reach 7/Combined Pump Plant	Air Compressors	2	7	115	0.48	Diesel
7522	Reach 7/Combined Pump Plant	Cranes	2	7	240	0.29	Diesel
7522	Reach 7/Combined Pump Plant	Cranes	2	7	375	0.29	Diesel
7522	Reach 7/Combined Pump Plant	Cranes	2	7	66	0.29	Diesel
7522	Reach 7/Combined Pump Plant	Generator Sets	3	10	12	0.74	Diesel
7522	Reach 7/Combined Pump Plant	Generator Sets	2	7	23	0.74	Diesel
7522	Reach 7/Combined Pump Plant	Other construction equipment	2	7	325	0.42	Diesel
7522	Reach 7/Combined Pump Plant	Welders	2	7	48	0.45	Diesel
7530	Reach 7/Combined Pump Plant	Bore/Drill Rigs	3	16	210	0.5	Diesel
7530	Reach 7/Combined Pump Plant	Bore/Drill Rigs	1	3	206	0.5	Diesel
7530	Reach 7/Combined Pump Plant	Cranes	3	16	160	0.29	Diesel
7530	Reach 7/Combined Pump Plant	Crawler Tractors	1	3	70	0.43	Diesel
7530	Reach 7/Combined Pump Plant	Crawler Tractors	3	16	145	0.43	Diesel
7530	Reach 7/Combined Pump Plant	Crawler Tractors	1	6	410	0.43	Diesel
7530	Reach 7/Combined Pump Plant	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
7530	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Excavators	1	16	523	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Excavators	1	4	163	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Excavators	1	1	315	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Excavators	1	3	384	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Gas Pump	1	14	2	0.69	Gasoline
7530	Reach 7/Combined Pump Plant	Generator Sets	4	17	12	0.74	Diesel
7530	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
7530	Reach 7/Combined Pump Plant	Graders	2	13	215	0.41	Diesel
7530	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	11	452	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Off-Highway Trucks	4	17	650	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Pumps	1	3	16	0.74	Diesel
7530	Reach 7/Combined Pump Plant	Pumps	1	5	60	0.74	Diesel
7530	Reach 7/Combined Pump Plant	Rollers	1	0	240	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Rollers	1	14	315	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Rollers	1	6	150	0.38	Diesel
7530	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	250	0.36	Diesel
7530	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	5	501	0.36	Diesel
7530	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	2	145	0.36	Diesel
7530	Reach 7/Combined Pump Plant	Scrapers	1	19	450	0.48	Diesel
7530	Reach 7/Combined Pump Plant	Scrapers	1	8	500	0.48	Diesel
7530	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	3	16	101	0.37	Diesel
7535	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
7535	Reach 7/Combined Pump Plant	Crawler Tractors	7	9	145	0.43	Diesel
7535	Reach 7/Combined Pump Plant	Crawler Tractors	1	8	410	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7535	Reach 7/Combined Pump Plant	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
7535	Reach 7/Combined Pump Plant	Excavators	1	0	128	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Excavators	2	10	523	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Excavators	1	3	384	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Generator Sets	10	10	12	0.74	Diesel
7535	Reach 7/Combined Pump Plant	Graders	3	7	215	0.41	Diesel
7535	Reach 7/Combined Pump Plant	Off-Highway Trucks	10	10	650	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Pumps	1	4	16	0.74	Diesel
7535	Reach 7/Combined Pump Plant	Rollers	1	0	240	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Rollers	2	10	315	0.38	Diesel
7535	Reach 7/Combined Pump Plant	Scrapers	3	8	450	0.48	Diesel
7535	Reach 7/Combined Pump Plant	Scrapers	1	4	500	0.48	Diesel
7540	Reach 7/Combined Pump Plant	Crawler Tractors	1	7	24	0.43	Diesel
7540	Reach 7/Combined Pump Plant	Graders	1	1	215	0.41	Diesel
7540	Reach 7/Combined Pump Plant	Pavers	1	0	224	0.42	Diesel
7540	Reach 7/Combined Pump Plant	Pavers	1	3	92	0.42	Diesel
7540	Reach 7/Combined Pump Plant	Plate Compactors	1	3	8	0.43	Diesel
7540	Reach 7/Combined Pump Plant	Pumps	1	0	16	0.74	Diesel
7540	Reach 7/Combined Pump Plant	Rollers	1	0	110	0.38	Diesel
7540	Reach 7/Combined Pump Plant	Rollers	1	0	131	0.38	Diesel
7540	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7540	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	6	197	0.36	Diesel
7540	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	1	211	0.36	Diesel
7540	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	5	87	0.37	Diesel
7540	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
7705	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7705	Reach 7/Combined Pump Plant	Generator Sets	1	9	107	0.74	Diesel
7705	Reach 7/Combined Pump Plant	Welders	1	9	48	0.45	Diesel
7710	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7710	Reach 7/Combined Pump Plant	Generator Sets	1	10	107	0.74	Diesel
7710	Reach 7/Combined Pump Plant	Welders	1	10	48	0.45	Diesel
7715	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7715	Reach 7/Combined Pump Plant	Generator Sets	2	5	107	0.74	Diesel
7715	Reach 7/Combined Pump Plant	Welders	2	5	48	0.45	Diesel
7725	Reach 7/Combined Pump Plant	Cranes	1	4	335	0.29	Diesel
7725	Reach 7/Combined Pump Plant	Welders	1	4	48	0.45	Diesel
7730	Reach 7/Combined Pump Plant	Cranes	1	0	160	0.29	Diesel
7730	Reach 7/Combined Pump Plant	Cranes	1	10	335	0.29	Diesel
7730	Reach 7/Combined Pump Plant	Pumps	1	1	80	0.74	Diesel
7730	Reach 7/Combined Pump Plant	Rollers	1	3	150	0.38	Diesel
7730	Reach 7/Combined Pump Plant	Rollers	1	2	18	0.38	Diesel
7730	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	7	145	0.36	Diesel
7730	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	5	101	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7730	Reach 7/Combined Pump Plant	Welders	3	10	48	0.45	Diesel
7760	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7760	Reach 7/Combined Pump Plant	Generator Sets	1	9	107	0.74	Diesel
7760	Reach 7/Combined Pump Plant	Welders	1	9	48	0.45	Diesel
7765	Reach 7/Combined Pump Plant	Cranes	1	7	100	0.29	Diesel
7765	Reach 7/Combined Pump Plant	Generator Sets	2	7	107	0.74	Diesel
7765	Reach 7/Combined Pump Plant	Welders	2	7	48	0.45	Diesel
7770	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7770	Reach 7/Combined Pump Plant	Generator Sets	2	5	107	0.74	Diesel
7770	Reach 7/Combined Pump Plant	Welders	2	5	48	0.45	Diesel
7780	Reach 7/Combined Pump Plant	Cranes	1	4	335	0.29	Diesel
7780	Reach 7/Combined Pump Plant	Welders	1	4	48	0.45	Diesel
7785	Reach 7/Combined Pump Plant	Cranes	1	0	160	0.29	Diesel
7785	Reach 7/Combined Pump Plant	Cranes	1	10	335	0.29	Diesel
7785	Reach 7/Combined Pump Plant	Pumps	1	1	80	0.74	Diesel
7785	Reach 7/Combined Pump Plant	Rollers	1	3	150	0.38	Diesel
7785	Reach 7/Combined Pump Plant	Rollers	1	2	18	0.38	Diesel
7785	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	7	145	0.36	Diesel
7785	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	5	101	0.37	Diesel
7785	Reach 7/Combined Pump Plant	Welders	3	10	48	0.45	Diesel
7810	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7810	Reach 7/Combined Pump Plant	Cranes	1	5	240	0.29	Diesel
7810	Reach 7/Combined Pump Plant	Cranes	1	5	335	0.29	Diesel
7810	Reach 7/Combined Pump Plant	Cranes	1	10	335	0.29	Diesel
7810	Reach 7/Combined Pump Plant	Crawler Tractors	1	3	242	0.43	Diesel
7810	Reach 7/Combined Pump Plant	Generator Sets	1	10	107	0.74	Diesel
7810	Reach 7/Combined Pump Plant	Other Construction Equipment	1	3	92	0.42	Diesel
7810	Reach 7/Combined Pump Plant	Welders	1	10	48	0.45	Diesel
7820	Reach 7/Combined Pump Plant	Cranes	2	9	240	0.29	Diesel
7820	Reach 7/Combined Pump Plant	Cranes	2	9	335	0.29	Diesel
7820	Reach 7/Combined Pump Plant	Crawler Tractors	2	9	242	0.43	Diesel
7820	Reach 7/Combined Pump Plant	Crawler Tractors	1	6	145	0.43	Diesel
7820	Reach 7/Combined Pump Plant	Excavators	1	6	384	0.38	Diesel
7820	Reach 7/Combined Pump Plant	Graders	1	2	158	0.41	Diesel
7820	Reach 7/Combined Pump Plant	Graders	1	6	215	0.41	Diesel
7820	Reach 7/Combined Pump Plant	Off-Highway Trucks	3	8	452	0.38	Diesel
7820	Reach 7/Combined Pump Plant	Other Construction Equipment	2	9	92	0.42	Diesel
7820	Reach 7/Combined Pump Plant	Pumps	1	3	60	0.74	Diesel
7820	Reach 7/Combined Pump Plant	Rollers	1	3	150	0.38	Diesel
7820	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	3	501	0.36	Diesel
7820	Reach 7/Combined Pump Plant	Scrapers	1	3	500	0.48	Diesel
7830	Reach 7/Combined Pump Plant	Crawler Tractors	1	6	24	0.43	Diesel
7830	Reach 7/Combined Pump Plant	Crawler Tractors	1	6	70	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7830	Reach 7/Combined Pump Plant	Graders	1	2	158	0.41	Diesel
7830	Reach 7/Combined Pump Plant	Off-Highway Trucks	2	9	452	0.38	Diesel
7830	Reach 7/Combined Pump Plant	Plate Compactors	1	6	8	0.43	Diesel
7830	Reach 7/Combined Pump Plant	Rollers	1	6	150	0.38	Diesel
7830	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	6	197	0.36	Diesel
7850	Reach 7/Combined Pump Plant	Air Compressors	1	10	310	0.48	Diesel
7850	Reach 7/Combined Pump Plant	Cranes	2	10	200	0.29	Diesel
7850	Reach 7/Combined Pump Plant	Cranes	1	10	445	0.29	Diesel
7850	Reach 7/Combined Pump Plant	Generator Sets	2	10	143	0.74	Diesel
7850	Reach 7/Combined Pump Plant	Pumps	2	10	80	0.74	Diesel
7905	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7905	Reach 7/Combined Pump Plant	Generator Sets	1	10	107	0.74	Diesel
7905	Reach 7/Combined Pump Plant	Welders	1	10	48	0.45	Diesel
7907	Reach 7/Combined Pump Plant	Cranes	1	5	100	0.29	Diesel
7907	Reach 7/Combined Pump Plant	Generator Sets	1	10	107	0.74	Diesel
7907	Reach 7/Combined Pump Plant	Welders	1	10	48	0.45	Diesel
7910	Reach 7/Combined Pump Plant	Cranes	1	1	335	0.29	Diesel
7912	Reach 7/Combined Pump Plant	Cranes	1	1	335	0.29	Diesel
7915	Reach 7/Combined Pump Plant	Cranes	2	9	240	0.29	Diesel
7915	Reach 7/Combined Pump Plant	Welders	4	9	48	0.45	Diesel
7917	Reach 7/Combined Pump Plant	Cranes	2	9	240	0.29	Diesel
7917	Reach 7/Combined Pump Plant	Welders	4	9	48	0.45	Diesel
7920	Reach 7/Combined Pump Plant	Air Compressors	2	7	80	0.48	Diesel
7920	Reach 7/Combined Pump Plant	Cranes	4	10	66	0.29	Diesel
7922	Reach 7/Combined Pump Plant	Air Compressors	2	7	80	0.48	Diesel
7922	Reach 7/Combined Pump Plant	Cranes	4	10	66	0.29	Diesel
7925	Reach 7/Combined Pump Plant	Air Compressors	1	8	80	0.48	Diesel
7925	Reach 7/Combined Pump Plant	Cranes	1	8	160	0.29	Diesel
7925	Reach 7/Combined Pump Plant	Cranes	1	1	240	0.29	Diesel
7925	Reach 7/Combined Pump Plant	Cranes	1	8	66	0.29	Diesel
7925	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	70	0.43	Diesel
7925	Reach 7/Combined Pump Plant	Generator Sets	1	0	107	0.74	Diesel
7925	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	1	375	0.38	Diesel
7925	Reach 7/Combined Pump Plant	Rollers	1	0	150	0.38	Diesel
7925	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	0	197	0.36	Diesel
7925	Reach 7/Combined Pump Plant	Welders	1	0	48	0.45	Diesel
7930	Reach 7/Combined Pump Plant	Air Compressors	2	7	80	0.48	Diesel
7930	Reach 7/Combined Pump Plant	Cranes	2	7	160	0.29	Diesel
7930	Reach 7/Combined Pump Plant	Cranes	1	3	240	0.29	Diesel
7930	Reach 7/Combined Pump Plant	Cranes	1	1	335	0.29	Diesel
7930	Reach 7/Combined Pump Plant	Cranes	2	7	66	0.29	Diesel
7930	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	242	0.43	Diesel
7930	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
7930	Reach 7/Combined Pump Plant	Crawler Tractors	1	0	145	0.43	Diesel
7930	Reach 7/Combined Pump Plant	Excavators	1	0	384	0.38	Diesel
7930	Reach 7/Combined Pump Plant	Generator Sets	1	1	107	0.74	Diesel
7930	Reach 7/Combined Pump Plant	Graders	1	0	158	0.41	Diesel
7930	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	2	375	0.38	Diesel
7930	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	1	452	0.38	Diesel
7930	Reach 7/Combined Pump Plant	Other Construction Equipment	1	1	92	0.42	Diesel
7930	Reach 7/Combined Pump Plant	Plate Compactors	1	4	8	0.43	Diesel
7930	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7930	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	9	197	0.36	Diesel
7930	Reach 7/Combined Pump Plant	Tractors/Loaders/Backhoes	1	8	101	0.37	Diesel
7930	Reach 7/Combined Pump Plant	Welders	1	1	48	0.45	Diesel
7935	Reach 7/Combined Pump Plant	Air Compressors	1	8	80	0.48	Diesel
7935	Reach 7/Combined Pump Plant	Cranes	1	1	100	0.29	Diesel
7935	Reach 7/Combined Pump Plant	Cranes	1	7	160	0.29	Diesel
7935	Reach 7/Combined Pump Plant	Cranes	1	2	240	0.29	Diesel
7935	Reach 7/Combined Pump Plant	Cranes	1	3	66	0.29	Diesel
7935	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
7935	Reach 7/Combined Pump Plant	Generator Sets	1	1	12	0.74	Diesel
7935	Reach 7/Combined Pump Plant	Generator Sets	1	1	107	0.74	Diesel
7935	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	2	375	0.38	Diesel
7935	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7935	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	1	197	0.36	Diesel
7935	Reach 7/Combined Pump Plant	Welders	1	1	48	0.45	Diesel
7940	Reach 7/Combined Pump Plant	Air Compressors	1	4	80	0.48	Diesel
7940	Reach 7/Combined Pump Plant	Cranes	1	4	160	0.29	Diesel
7940	Reach 7/Combined Pump Plant	Cranes	1	2	240	0.29	Diesel
7940	Reach 7/Combined Pump Plant	Cranes	1	4	66	0.29	Diesel
7940	Reach 7/Combined Pump Plant	Crawler Tractors	1	1	70	0.43	Diesel
7940	Reach 7/Combined Pump Plant	Generator Sets	1	1	107	0.74	Diesel
7940	Reach 7/Combined Pump Plant	Off-Highway Trucks	1	2	375	0.38	Diesel
7940	Reach 7/Combined Pump Plant	Rollers	1	1	150	0.38	Diesel
7940	Reach 7/Combined Pump Plant	Rubber Tired Loaders	1	1	197	0.36	Diesel
7940	Reach 7/Combined Pump Plant	Welders	1	1	48	0.45	Diesel
1020	Reach 4	Air Compressors	1	20	80	0.48	Diesel
1020	Reach 4	Cranes	1	8	175	0.29	Diesel
1020	Reach 4	Cranes	1	10	66	0.29	Diesel
1030	Reach 4	Cranes	1	24	240	0.29	Diesel
1030	Reach 4	Cranes	1	24	275	0.29	Diesel
1030	Reach 4	Cranes	1	23	335	0.29	Diesel
1030	Reach 4	Cranes	1	24	335	0.29	Diesel
1030	Reach 4	Crawler Tractors	1	24	145	0.43	Diesel
1030	Reach 4	Off-Highway Trucks	4	24	375	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1030	Reach 4	Pumps	1	24	60	0.74	Diesel
1030	Reach 4	Rubber Tired Loaders	1	24	160	0.36	Diesel
1030	Reach 4	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1040	Reach 4	Cranes	1	23	360	0.29	Diesel
1040	Reach 4	Rubber Tired Loaders	1	23	200	0.36	Diesel
1050	Reach 4	Cranes	1	23	360	0.29	Diesel
1100	Reach 4	Cranes	7	23	360	0.29	Diesel
1100	Reach 4	Pumps	13	23	210	0.74	Diesel
1110	Reach 4	Cranes	1	24	360	0.29	Diesel
1120	Reach 4	Cranes	1	12	360	0.29	Diesel
1130	Reach 4	Cranes	1	24	360	0.29	Diesel
1140	Reach 4	Air Compressors	1	1	80	0.48	Diesel
1140	Reach 4	Cement and Mortar Mixers	3	9	18	0.56	Diesel
1140	Reach 4	Cranes	3	9	100	0.29	Diesel
1140	Reach 4	Cranes	1	1	66	0.29	Diesel
1140	Reach 4	Pumps	3	9	215	0.74	Diesel
1140	Reach 4	Tractors/Loaders/Backhoes	3	9	101	0.37	Diesel
1160	Reach 4	Cranes	1	23	360	0.29	Diesel
1160	Reach 4	Pumps	2	23	210	0.74	Diesel
1170	Reach 4	Air Compressors	1	20	80	0.48	Diesel
1170	Reach 4	Cranes	1	8	175	0.29	Diesel
1170	Reach 4	Cranes	1	10	66	0.29	Diesel
1180	Reach 4	Cranes	1	24	240	0.29	Diesel
1180	Reach 4	Cranes	1	24	275	0.29	Diesel
1180	Reach 4	Cranes	1	23	335	0.29	Diesel
1180	Reach 4	Cranes	1	24	335	0.29	Diesel
1180	Reach 4	Crawler Tractors	1	24	145	0.43	Diesel
1180	Reach 4	Off-Highway Trucks	4	24	375	0.38	Diesel
1180	Reach 4	Pumps	1	24	60	0.74	Diesel
1180	Reach 4	Rubber Tired Loaders	1	24	160	0.36	Diesel
1180	Reach 4	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1190	Reach 4	Cranes	1	23	360	0.29	Diesel
1190	Reach 4	Rubber Tired Loaders	1	23	200	0.36	Diesel
1200	Reach 4	Air Compressors	1	1	80	0.48	Diesel
1200	Reach 4	Cement and Mortar Mixers	2	13	18	0.56	Diesel
1200	Reach 4	Cranes	2	13	100	0.29	Diesel
1200	Reach 4	Cranes	1	1	66	0.29	Diesel
1200	Reach 4	Pumps	2	13	215	0.74	Diesel
1200	Reach 4	Tractors/Loaders/Backhoes	2	13	101	0.37	Diesel
1210	Reach 4	Cranes	1	23	360	0.29	Diesel
1220	Reach 4	Cranes	1	23	360	0.29	Diesel
1220	Reach 4	Pumps	2	23	210	0.74	Diesel
1230	Reach 4	Cranes	1	24	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1240	Reach 4	Cranes	1	12	360	0.29	Diesel
1250	Reach 4	Cranes	1	24	360	0.29	Diesel
1260	Reach 4	Cranes	1	24	360	0.29	Diesel
1270	Reach 4	Cranes	1	23	360	0.29	Diesel
1270	Reach 4	Pumps	2	23	210	0.74	Diesel
1280	Reach 4	Cranes	2	13	360	0.29	Diesel
1280	Reach 4	Rubber Tired Loaders	1	24	375	0.36	Diesel
1280	Reach 4	Welders	1	24	46	0.45	Diesel
1310	Reach 4	Cranes	1	24	360	0.29	Diesel
1320	Reach 4	Cranes	1	24	360	0.29	Diesel
1320	Reach 4	Pumps	1	24	210	0.74	Diesel
1330	Reach 4	Cranes	1	24	360	0.29	Diesel
1330	Reach 4	Crawler Tractors	1	17	82	0.43	Diesel
1330	Reach 4	Excavators	1	8	165	0.38	Diesel
1330	Reach 4	Other construction equipment	1	17	6	0.42	Diesel
1330	Reach 4	Pumps	1	3	210	0.74	Diesel
1330	Reach 4	Rollers	1	8	240	0.38	Diesel
1340	Reach 4	Cranes	1	24	360	0.29	Diesel
1340	Reach 4	Crawler Tractors	1	17	82	0.43	Diesel
1340	Reach 4	Excavators	1	8	165	0.38	Diesel
1340	Reach 4	Other construction equipment	1	17	6	0.42	Diesel
1340	Reach 4	Pumps	1	3	210	0.74	Diesel
1340	Reach 4	Rollers	1	8	240	0.38	Diesel
1390	Reach 4	Air Compressors	1	9	78	0.48	Diesel
1390	Reach 4	Cranes	1	9	175	0.29	Diesel
1390	Reach 4	Crawler Tractors	1	9	335	0.43	Diesel
1390	Reach 4	Rubber Tired Loaders	1	9	100	0.36	Diesel
1390	Reach 4	Welders	1	19	46	0.45	Diesel
1650	Reach 4	Cranes	1	3	360	0.29	Diesel
1650	Reach 4	Cranes	1	3	175	0.29	Diesel
1650	Reach 4	Crawler Tractors	1	3	335	0.43	Diesel
1650	Reach 4	Excavators	1	3	165	0.38	Diesel
1650	Reach 4	Rubber Tired Loaders	1	3	100	0.36	Diesel
1650	Reach 4	Rubber Tired Loaders	1	3	375	0.36	Diesel
1650	Reach 4	Welders	1	24	46	0.45	Diesel
1660	Reach 4	Cranes	1	3	360	0.29	Diesel
1660	Reach 4	Cranes	1	3	175	0.29	Diesel
1660	Reach 4	Crawler Tractors	1	3	335	0.43	Diesel
1660	Reach 4	Excavators	1	3	165	0.38	Diesel
1660	Reach 4	Rubber Tired Loaders	1	3	100	0.36	Diesel
1660	Reach 4	Rubber Tired Loaders	1	3	375	0.36	Diesel
1660	Reach 4	Welders	1	24	46	0.45	Diesel
1880	Reach 4	Cranes	2	13	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1880	Reach 4	Rubber Tired Loaders	1	24	375	0.36	Diesel
1880	Reach 4	Welders	1	24	46	0.45	Diesel
1890	Reach 4	Cranes	2	16	360	0.29	Diesel
1890	Reach 4	Crawler Tractors	1	11	82	0.43	Diesel
1890	Reach 4	Rubber Tired Loaders	1	11	65	0.36	Diesel
1890	Reach 4	Rubber Tired Loaders	2	16	200	0.36	Diesel
1890	Reach 4	Welders	2	16	46	0.45	Diesel
2010	Reach 4	Crawler Tractors	1	13	335	0.43	Diesel
2010	Reach 4	Graders	1	13	200	0.41	Diesel
2010	Reach 4	Off-Highway Trucks	2	13	450	0.38	Diesel
2010	Reach 4	Rollers	2	13	240	0.38	Diesel
2010	Reach 4	Rubber Tired Loaders	1	13	375	0.36	Diesel
2030	Reach 4	Cranes	1	6	360	0.29	Diesel
2030	Reach 4	Rubber Tired Loaders	1	6	375	0.36	Diesel
2033	Reach 4	Air Compressors	1	1	80	0.48	Diesel
2033	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2033	Reach 4	Cranes	2	19	100	0.29	Diesel
2033	Reach 4	Cranes	1	0	66	0.29	Diesel
2033	Reach 4	Crawler Tractors	1	1	145	0.43	Diesel
2033	Reach 4	Excavators	1	1	128	0.38	Diesel
2033	Reach 4	Graders	1	1	215	0.41	Diesel
2033	Reach 4	Pumps	2	19	215	0.74	Diesel
2033	Reach 4	Pumps	1	1	16	0.74	Diesel
2033	Reach 4	Rollers	1	1	150	0.38	Diesel
2033	Reach 4	Scrapers	1	1	175	0.48	Diesel
2033	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2040	Reach 4	Cranes	1	8	175	0.29	Diesel
2040	Reach 4	Rubber Tired Loaders	1	8	200	0.36	Diesel
2043	Reach 4	Air Compressors	1	3	80	0.48	Diesel
2043	Reach 4	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2043	Reach 4	Cranes	2	22	100	0.29	Diesel
2043	Reach 4	Cranes	1	13	240	0.29	Diesel
2043	Reach 4	Cranes	1	13	275	0.29	Diesel
2043	Reach 4	Cranes	1	13	335	0.29	Diesel
2043	Reach 4	Cranes	1	13	335	0.29	Diesel
2043	Reach 4	Cranes	1	1	66	0.29	Diesel
2043	Reach 4	Crawler Tractors	1	0	70	0.43	Diesel
2043	Reach 4	Crawler Tractors	1	20	145	0.43	Diesel
2043	Reach 4	Excavators	1	0	315	0.38	Diesel
2043	Reach 4	Excavators	1	3	384	0.38	Diesel
2043	Reach 4	Gas Pump	1	2	2	0.69	Gasoline
2043	Reach 4	Generator Sets	1	1	12	0.74	Diesel
2043	Reach 4	Graders	1	0	158	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2043	Reach 4	Graders	1	1	215	0.41	Diesel
2043	Reach 4	Off-Highway Trucks	3	19	375	0.38	Diesel
2043	Reach 4	Pumps	2	22	215	0.74	Diesel
2043	Reach 4	Pumps	1	0	16	0.74	Diesel
2043	Reach 4	Pumps	1	14	60	0.74	Diesel
2043	Reach 4	Rollers	1	0	240	0.38	Diesel
2043	Reach 4	Rollers	1	1	315	0.38	Diesel
2043	Reach 4	Rollers	1	0	150	0.38	Diesel
2043	Reach 4	Rollers	1	0	18	0.38	Diesel
2043	Reach 4	Rubber Tired Loaders	1	13	160	0.36	Diesel
2043	Reach 4	Rubber Tired Loaders	1	0	145	0.36	Diesel
2043	Reach 4	Scrapers	1	0	450	0.48	Diesel
2043	Reach 4	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2043	Reach 4	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2050	Reach 4	Air Compressors	1	3	80	0.48	Diesel
2050	Reach 4	Cranes	1	0	160	0.29	Diesel
2050	Reach 4	Cranes	1	0	240	0.29	Diesel
2050	Reach 4	Cranes	1	1	275	0.29	Diesel
2050	Reach 4	Cranes	1	2	66	0.29	Diesel
2050	Reach 4	Crawler Tractors	1	0	70	0.43	Diesel
2050	Reach 4	Crawler Tractors	1	2	145	0.43	Diesel
2050	Reach 4	Crawler Tractors	1	0	410	0.43	Diesel
2050	Reach 4	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2050	Reach 4	Excavators	1	0	128	0.38	Diesel
2050	Reach 4	Excavators	1	1	523	0.38	Diesel
2050	Reach 4	Excavators	1	0	384	0.38	Diesel
2050	Reach 4	Generator Sets	1	3	12	0.74	Diesel
2050	Reach 4	Generator Sets	1	0	107	0.74	Diesel
2050	Reach 4	Graders	1	1	158	0.41	Diesel
2050	Reach 4	Graders	1	1	215	0.41	Diesel
2050	Reach 4	Off-Highway Trucks	1	0	375	0.38	Diesel
2050	Reach 4	Off-Highway Trucks	1	0	452	0.38	Diesel
2050	Reach 4	Off-Highway Trucks	1	2	650	0.38	Diesel
2050	Reach 4	Plate Compactors	1	0	8	0.43	Diesel
2050	Reach 4	Pumps	1	0	16	0.74	Diesel
2050	Reach 4	Pumps	1	0	60	0.74	Diesel
2050	Reach 4	Rollers	1	0	240	0.38	Diesel
2050	Reach 4	Rollers	1	1	315	0.38	Diesel
2050	Reach 4	Rollers	1	1	150	0.38	Diesel
2050	Reach 4	Rubber Tired Loaders	1	1	197	0.36	Diesel
2050	Reach 4	Rubber Tired Loaders	1	0	501	0.36	Diesel
2050	Reach 4	Scrapers	1	0	175	0.48	Diesel
2050	Reach 4	Scrapers	1	1	450	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2050	Reach 4	Scrapers	1	0	500	0.48	Diesel
2050	Reach 4	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
2050	Reach 4	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
2050	Reach 4	Welders	1	0	48	0.45	Diesel
2053	Reach 4	Cranes	1	22	360	0.29	Diesel
2053	Reach 4	Cranes	1	2	175	0.29	Diesel
2053	Reach 4	Rubber Tired Loaders	1	22	200	0.36	Diesel
2060	Reach 4	Crawler Tractors	2	6	70	0.43	Diesel
2060	Reach 4	Crawler Tractors	8	9	145	0.43	Diesel
2060	Reach 4	Crawler Tractors	2	6	410	0.43	Diesel
2060	Reach 4	Excavators	2	10	523	0.38	Diesel
2060	Reach 4	Excavators	1	5	384	0.38	Diesel
2060	Reach 4	Gas Pump	8	10	2	0.69	Gasoline
2060	Reach 4	Generator Sets	10	10	12	0.74	Diesel
2060	Reach 4	Graders	1	0	158	0.41	Diesel
2060	Reach 4	Graders	3	8	215	0.41	Diesel
2060	Reach 4	Off-Highway Trucks	1	8	452	0.38	Diesel
2060	Reach 4	Off-Highway Trucks	10	10	650	0.38	Diesel
2060	Reach 4	Pumps	1	4	16	0.74	Diesel
2060	Reach 4	Rollers	2	10	315	0.38	Diesel
2060	Reach 4	Rollers	1	1	150	0.38	Diesel
2060	Reach 4	Rubber Tired Loaders	1	10	145	0.36	Diesel
2060	Reach 4	Scrapers	4	10	450	0.48	Diesel
2060	Reach 4	Scrapers	1	4	500	0.48	Diesel
2063	Reach 4	Cranes	1	22	360	0.29	Diesel
2063	Reach 4	Pumps	1	7	210	0.74	Diesel
2070	Reach 4	Crawler Tractors	2	6	24	0.43	Diesel
2070	Reach 4	Crawler Tractors	2	10	145	0.43	Diesel
2070	Reach 4	Crawler Tractors	2	10	410	0.43	Diesel
2070	Reach 4	Graders	1	10	215	0.41	Diesel
2070	Reach 4	Rollers	2	10	240	0.38	Diesel
2070	Reach 4	Scrapers	10	10	450	0.48	Diesel
2070	Reach 4	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
2073	Reach 4	Cranes	1	24	360	0.29	Diesel
2073	Reach 4	Crawler Tractors	2	20	82	0.43	Diesel
2073	Reach 4	Excavators	1	23	165	0.38	Diesel
2073	Reach 4	Other construction equipment	2	20	6	0.42	Diesel
2073	Reach 4	Pumps	1	2	210	0.74	Diesel
2073	Reach 4	Rollers	1	23	240	0.38	Diesel
2080	Reach 4	Crawler Tractors	1	1	24	0.43	Diesel
2080	Reach 4	Generator Sets	1	1	713	0.74	Diesel
2080	Reach 4	Rubber Tired Loaders	1	4	211	0.36	Diesel
2080	Reach 4	Welders	1	0	48	0.45	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2083	Reach 4	Cranes	1	22	360	0.29	Diesel
2083	Reach 4	Cranes	1	2	175	0.29	Diesel
2083	Reach 4	Rubber Tired Loaders	1	22	200	0.36	Diesel
2093	Reach 4	Cranes	1	22	360	0.29	Diesel
2093	Reach 4	Pumps	1	7	210	0.74	Diesel
2110	Reach 4	Cranes	2	16	360	0.29	Diesel
2110	Reach 4	Crawler Tractors	1	11	82	0.43	Diesel
2110	Reach 4	Rubber Tired Loaders	1	11	65	0.36	Diesel
2110	Reach 4	Rubber Tired Loaders	2	16	200	0.36	Diesel
2110	Reach 4	Welders	2	16	46	0.45	Diesel
2113	Reach 4	Crawler Tractors	1	3	24	0.43	Diesel
2113	Reach 4	Crawler Tractors	1	4	145	0.43	Diesel
2113	Reach 4	Excavators	1	2	384	0.38	Diesel
2113	Reach 4	Graders	1	1	215	0.41	Diesel
2113	Reach 4	Pumps	1	0	16	0.74	Diesel
2113	Reach 4	Rollers	1	2	315	0.38	Diesel
2113	Reach 4	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2123	Reach 4	Air Compressors	1	1	80	0.48	Diesel
2123	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2123	Reach 4	Cranes	2	19	100	0.29	Diesel
2123	Reach 4	Cranes	1	0	66	0.29	Diesel
2123	Reach 4	Crawler Tractors	1	1	145	0.43	Diesel
2123	Reach 4	Excavators	1	1	128	0.38	Diesel
2123	Reach 4	Graders	1	1	215	0.41	Diesel
2123	Reach 4	Pumps	2	19	215	0.74	Diesel
2123	Reach 4	Pumps	1	1	16	0.74	Diesel
2123	Reach 4	Rollers	1	1	150	0.38	Diesel
2123	Reach 4	Scrapers	1	1	175	0.48	Diesel
2123	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2193	Reach 4	Cranes	1	22	360	0.29	Diesel
2193	Reach 4	Crawler Tractors	2	17	82	0.43	Diesel
2193	Reach 4	Excavators	1	20	165	0.38	Diesel
2193	Reach 4	Other construction equipment	2	17	6	0.42	Diesel
2193	Reach 4	Pumps	1	3	210	0.74	Diesel
2193	Reach 4	Rollers	1	20	240	0.38	Diesel
2203	Reach 4	Crawler Tractors	1	5	24	0.43	Diesel
2203	Reach 4	Crawler Tractors	1	3	145	0.43	Diesel
2203	Reach 4	Excavators	1	2	384	0.38	Diesel
2203	Reach 4	Graders	1	1	215	0.41	Diesel
2203	Reach 4	Pumps	1	0	16	0.74	Diesel
2203	Reach 4	Rollers	1	2	315	0.38	Diesel
2203	Reach 4	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2213	Reach 4	Air Compressors	1	1	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2213	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2213	Reach 4	Cranes	2	19	100	0.29	Diesel
2213	Reach 4	Cranes	1	0	66	0.29	Diesel
2213	Reach 4	Crawler Tractors	1	1	145	0.43	Diesel
2213	Reach 4	Excavators	1	1	128	0.38	Diesel
2213	Reach 4	Graders	1	1	215	0.41	Diesel
2213	Reach 4	Pumps	2	19	215	0.74	Diesel
2213	Reach 4	Pumps	1	1	16	0.74	Diesel
2213	Reach 4	Rollers	1	1	150	0.38	Diesel
2213	Reach 4	Scrapers	1	1	175	0.48	Diesel
2213	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2233	Reach 4	Air Compressors	1	3	80	0.48	Diesel
2233	Reach 4	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2233	Reach 4	Cranes	2	22	100	0.29	Diesel
2233	Reach 4	Cranes	1	13	240	0.29	Diesel
2233	Reach 4	Cranes	1	13	275	0.29	Diesel
2233	Reach 4	Cranes	1	13	335	0.29	Diesel
2233	Reach 4	Cranes	1	13	335	0.29	Diesel
2233	Reach 4	Cranes	1	1	66	0.29	Diesel
2233	Reach 4	Crawler Tractors	1	0	70	0.43	Diesel
2233	Reach 4	Crawler Tractors	1	20	145	0.43	Diesel
2233	Reach 4	Excavators	1	0	315	0.38	Diesel
2233	Reach 4	Excavators	1	3	384	0.38	Diesel
2233	Reach 4	Gas Pump	1	2	2	0.69	Gasoline
2233	Reach 4	Generator Sets	1	1	12	0.74	Diesel
2233	Reach 4	Graders	1	0	158	0.41	Diesel
2233	Reach 4	Graders	1	1	215	0.41	Diesel
2233	Reach 4	Off-Highway Trucks	3	19	375	0.38	Diesel
2233	Reach 4	Pumps	2	22	215	0.74	Diesel
2233	Reach 4	Pumps	1	0	16	0.74	Diesel
2233	Reach 4	Pumps	1	14	60	0.74	Diesel
2233	Reach 4	Rollers	1	0	240	0.38	Diesel
2233	Reach 4	Rollers	1	1	315	0.38	Diesel
2233	Reach 4	Rollers	1	0	150	0.38	Diesel
2233	Reach 4	Rollers	1	0	18	0.38	Diesel
2233	Reach 4	Rubber Tired Loaders	1	13	160	0.36	Diesel
2233	Reach 4	Rubber Tired Loaders	1	0	145	0.36	Diesel
2233	Reach 4	Scrapers	1	0	450	0.48	Diesel
2233	Reach 4	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2233	Reach 4	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2243	Reach 4	Cranes	1	21	360	0.29	Diesel
2243	Reach 4	Cranes	1	2	175	0.29	Diesel
2243	Reach 4	Rubber Tired Loaders	1	21	200	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2253	Reach 4	Cranes	1	21	360	0.29	Diesel
2253	Reach 4	Cranes	1	2	175	0.29	Diesel
2253	Reach 4	Rubber Tired Loaders	1	21	200	0.36	Diesel
2263	Reach 4	Cranes	1	21	360	0.29	Diesel
2263	Reach 4	Pumps	1	7	210	0.74	Diesel
2273	Reach 4	Cranes	1	21	360	0.29	Diesel
2273	Reach 4	Pumps	1	7	210	0.74	Diesel
2283	Reach 4	Cranes	1	22	360	0.29	Diesel
2283	Reach 4	Crawler Tractors	2	17	82	0.43	Diesel
2283	Reach 4	Excavators	1	20	165	0.38	Diesel
2283	Reach 4	Other construction equipment	2	17	6	0.42	Diesel
2283	Reach 4	Pumps	1	3	210	0.74	Diesel
2283	Reach 4	Rollers	1	20	240	0.38	Diesel
2293	Reach 4	Cranes	1	24	360	0.29	Diesel
2293	Reach 4	Crawler Tractors	2	20	82	0.43	Diesel
2293	Reach 4	Excavators	1	23	165	0.38	Diesel
2293	Reach 4	Other construction equipment	2	20	6	0.42	Diesel
2293	Reach 4	Pumps	1	2	210	0.74	Diesel
2293	Reach 4	Rollers	1	23	240	0.38	Diesel
2303	Reach 4	Air Compressors	1	1	80	0.48	Diesel
2303	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2303	Reach 4	Cranes	2	19	100	0.29	Diesel
2303	Reach 4	Cranes	1	0	66	0.29	Diesel
2303	Reach 4	Crawler Tractors	1	0	145	0.43	Diesel
2303	Reach 4	Excavators	1	0	128	0.38	Diesel
2303	Reach 4	Graders	1	0	215	0.41	Diesel
2303	Reach 4	Pumps	2	19	215	0.74	Diesel
2303	Reach 4	Pumps	1	0	16	0.74	Diesel
2303	Reach 4	Rollers	1	0	150	0.38	Diesel
2303	Reach 4	Scrapers	1	0	175	0.48	Diesel
2303	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2313	Reach 4	Crawler Tractors	1	4	24	0.43	Diesel
2313	Reach 4	Crawler Tractors	1	0	70	0.43	Diesel
2313	Reach 4	Crawler Tractors	1	14	145	0.43	Diesel
2313	Reach 4	Crawler Tractors	1	0	410	0.43	Diesel
2313	Reach 4	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2313	Reach 4	Excavators	1	0	128	0.38	Diesel
2313	Reach 4	Excavators	1	6	384	0.38	Diesel
2313	Reach 4	Generator Sets	1	0	12	0.74	Diesel
2313	Reach 4	Graders	1	3	215	0.41	Diesel
2313	Reach 4	Off-Highway Trucks	1	3	375	0.38	Diesel
2313	Reach 4	Pumps	1	2	16	0.74	Diesel
2313	Reach 4	Rollers	1	0	240	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2313	Reach 4	Rollers	1	4	315	0.38	Diesel
2313	Reach 4	Rollers	1	1	150	0.38	Diesel
2313	Reach 4	Scrapers	1	1	175	0.48	Diesel
2313	Reach 4	Scrapers	1	1	450	0.48	Diesel
2313	Reach 4	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2323	Reach 4	Air Compressors	1	1	80	0.48	Diesel
2323	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2323	Reach 4	Cranes	2	19	100	0.29	Diesel
2323	Reach 4	Cranes	1	0	66	0.29	Diesel
2323	Reach 4	Crawler Tractors	1	1	145	0.43	Diesel
2323	Reach 4	Excavators	1	1	128	0.38	Diesel
2323	Reach 4	Graders	1	1	215	0.41	Diesel
2323	Reach 4	Pumps	2	19	215	0.74	Diesel
2323	Reach 4	Pumps	1	1	16	0.74	Diesel
2323	Reach 4	Rollers	1	1	150	0.38	Diesel
2323	Reach 4	Scrapers	1	1	175	0.48	Diesel
2323	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2333	Reach 4	Cranes	1	24	360	0.29	Diesel
2333	Reach 4	Crawler Tractors	1	15	82	0.43	Diesel
2333	Reach 4	Excavators	1	7	165	0.38	Diesel
2333	Reach 4	Other construction equipment	1	15	6	0.42	Diesel
2333	Reach 4	Pumps	1	3	210	0.74	Diesel
2333	Reach 4	Rollers	1	7	240	0.38	Diesel
2343	Reach 4	Air Compressors	1	1	80	0.48	Diesel
2343	Reach 4	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2343	Reach 4	Cranes	2	19	100	0.29	Diesel
2343	Reach 4	Cranes	1	0	66	0.29	Diesel
2343	Reach 4	Crawler Tractors	1	1	145	0.43	Diesel
2343	Reach 4	Excavators	1	1	128	0.38	Diesel
2343	Reach 4	Graders	1	1	215	0.41	Diesel
2343	Reach 4	Pumps	2	19	215	0.74	Diesel
2343	Reach 4	Pumps	1	1	16	0.74	Diesel
2343	Reach 4	Rollers	1	1	150	0.38	Diesel
2343	Reach 4	Scrapers	1	1	175	0.48	Diesel
2343	Reach 4	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2353	Reach 4	Cranes	1	24	360	0.29	Diesel
2353	Reach 4	Crawler Tractors	1	15	82	0.43	Diesel
2353	Reach 4	Excavators	1	7	165	0.38	Diesel
2353	Reach 4	Other construction equipment	1	15	6	0.42	Diesel
2353	Reach 4	Pumps	1	3	210	0.74	Diesel
2353	Reach 4	Rollers	1	7	240	0.38	Diesel
1015	Reach 5	Air Compressors	1	5	80	0.48	Diesel
1015	Reach 5	Cement and Mortar Mixers	4	19	18	0.56	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1015	Reach 5	Cranes	4	19	100	0.29	Diesel
1015	Reach 5	Cranes	2	17	240	0.29	Diesel
1015	Reach 5	Cranes	2	18	275	0.29	Diesel
1015	Reach 5	Cranes	2	18	335	0.29	Diesel
1015	Reach 5	Cranes	2	18	335	0.29	Diesel
1015	Reach 5	Cranes	1	3	66	0.29	Diesel
1015	Reach 5	Crawler Tractors	1	1	70	0.43	Diesel
1015	Reach 5	Crawler Tractors	3	17	145	0.43	Diesel
1015	Reach 5	Excavators	1	1	128	0.38	Diesel
1015	Reach 5	Excavators	1	1	315	0.38	Diesel
1015	Reach 5	Excavators	1	4	384	0.38	Diesel
1015	Reach 5	Gas Pump	1	3	2	0.69	Gasoline
1015	Reach 5	Generator Sets	1	1	12	0.74	Diesel
1015	Reach 5	Graders	1	0	158	0.41	Diesel
1015	Reach 5	Graders	1	3	215	0.41	Diesel
1015	Reach 5	Off-Highway Trucks	7	22	375	0.38	Diesel
1015	Reach 5	Pumps	4	19	215	0.74	Diesel
1015	Reach 5	Pumps	1	1	16	0.74	Diesel
1015	Reach 5	Pumps	2	19	60	0.74	Diesel
1015	Reach 5	Rollers	1	0	240	0.38	Diesel
1015	Reach 5	Rollers	1	2	315	0.38	Diesel
1015	Reach 5	Rollers	1	1	150	0.38	Diesel
1015	Reach 5	Rubber Tired Loaders	2	18	160	0.36	Diesel
1015	Reach 5	Rubber Tired Loaders	1	0	145	0.36	Diesel
1015	Reach 5	Scrapers	1	1	175	0.48	Diesel
1015	Reach 5	Scrapers	1	0	450	0.48	Diesel
1015	Reach 5	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
1015	Reach 5	Tractors/Loaders/Backhoes	5	23	101	0.37	Diesel
1030	Reach 5	Cranes	1	8	175	0.29	Diesel
1040	Reach 5	Cranes	1	24	360	0.29	Diesel
1040	Reach 5	Rubber Tired Loaders	1	24	200	0.36	Diesel
1050	Reach 5	Cranes	1	23	360	0.29	Diesel
1060	Reach 5	Cranes	1	23	360	0.29	Diesel
1060	Reach 5	Pumps	2	23	210	0.74	Diesel
1100	Reach 5	Cranes	1	24	360	0.29	Diesel
1100	Reach 5	Pumps	1	24	210	0.74	Diesel
1110	Reach 5	Cranes	1	23	360	0.29	Diesel
1120	Reach 5	Cranes	1	24	360	0.29	Diesel
1130	Reach 5	Cranes	1	24	360	0.29	Diesel
1160	Reach 5	Cranes	1	23	360	0.29	Diesel
1160	Reach 5	Pumps	2	23	210	0.74	Diesel
1190	Reach 5	Cranes	1	24	360	0.29	Diesel
1190	Reach 5	Cranes	1	1	175	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1190	Reach 5	Rubber Tired Loaders	1	24	200	0.36	Diesel
1210	Reach 5	Cranes	1	23	360	0.29	Diesel
1220	Reach 5	Cranes	1	23	360	0.29	Diesel
1220	Reach 5	Pumps	2	23	210	0.74	Diesel
1230	Reach 5	Cranes	1	23	360	0.29	Diesel
1240	Reach 5	Cranes	1	24	360	0.29	Diesel
1250	Reach 5	Cranes	1	24	360	0.29	Diesel
1260	Reach 5	Cranes	1	24	360	0.29	Diesel
1270	Reach 5	Cranes	1	23	360	0.29	Diesel
1270	Reach 5	Pumps	2	23	210	0.74	Diesel
1280	Reach 5	Cranes	2	13	360	0.29	Diesel
1280	Reach 5	Rubber Tired Loaders	1	24	375	0.36	Diesel
1280	Reach 5	Welders	1	24	46	0.45	Diesel
1290	Reach 5	Cranes	1	8	360	0.29	Diesel
1290	Reach 5	Pumps	1	8	210	0.74	Diesel
1310	Reach 5	Cranes	1	24	360	0.29	Diesel
1390	Reach 5	Air Compressors	1	9	78	0.48	Diesel
1390	Reach 5	Cranes	1	9	175	0.29	Diesel
1390	Reach 5	Crawler Tractors	1	9	335	0.43	Diesel
1390	Reach 5	Rubber Tired Loaders	1	9	100	0.36	Diesel
1390	Reach 5	Welders	1	19	46	0.45	Diesel
1650	Reach 5	Cranes	1	1	360	0.29	Diesel
1650	Reach 5	Cranes	1	2	360	0.29	Diesel
1650	Reach 5	Cranes	1	2	175	0.29	Diesel
1650	Reach 5	Crawler Tractors	1	2	335	0.43	Diesel
1650	Reach 5	Excavators	1	2	165	0.38	Diesel
1650	Reach 5	Rubber Tired Loaders	1	2	100	0.36	Diesel
1650	Reach 5	Rubber Tired Loaders	1	2	375	0.36	Diesel
1650	Reach 5	Welders	1	22	46	0.45	Diesel
1660	Reach 5	Cranes	1	1	360	0.29	Diesel
1660	Reach 5	Cranes	1	2	360	0.29	Diesel
1660	Reach 5	Cranes	1	2	175	0.29	Diesel
1660	Reach 5	Crawler Tractors	1	2	335	0.43	Diesel
1660	Reach 5	Excavators	1	2	165	0.38	Diesel
1660	Reach 5	Rubber Tired Loaders	1	2	100	0.36	Diesel
1660	Reach 5	Rubber Tired Loaders	1	2	375	0.36	Diesel
1660	Reach 5	Welders	1	22	46	0.45	Diesel
1880	Reach 5	Cranes	2	13	360	0.29	Diesel
1880	Reach 5	Rubber Tired Loaders	1	24	375	0.36	Diesel
1880	Reach 5	Welders	1	24	46	0.45	Diesel
1890	Reach 5	Cranes	1	24	360	0.29	Diesel
1890	Reach 5	Crawler Tractors	1	11	82	0.43	Diesel
1890	Reach 5	Rubber Tired Loaders	1	11	65	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1890	Reach 5	Rubber Tired Loaders	1	24	200	0.36	Diesel
1890	Reach 5	Welders	1	24	46	0.45	Diesel
2010	Reach 5	Crawler Tractors	1	15	335	0.43	Diesel
2010	Reach 5	Graders	1	15	200	0.41	Diesel
2010	Reach 5	Off-Highway Trucks	2	15	450	0.38	Diesel
2010	Reach 5	Rollers	2	15	240	0.38	Diesel
2010	Reach 5	Rubber Tired Loaders	1	15	375	0.36	Diesel
2020	Reach 5	Crawler Tractors	1	3	24	0.43	Diesel
2020	Reach 5	Generator Sets	1	3	713	0.74	Diesel
2020	Reach 5	Rubber Tired Loaders	1	9	211	0.36	Diesel
2020	Reach 5	Welders	1	1	48	0.45	Diesel
2033	Reach 5	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2033	Reach 5	Cranes	2	19	100	0.29	Diesel
2033	Reach 5	Crawler Tractors	1	0	145	0.43	Diesel
2033	Reach 5	Excavators	1	0	128	0.38	Diesel
2033	Reach 5	Graders	1	0	215	0.41	Diesel
2033	Reach 5	Pumps	2	19	215	0.74	Diesel
2033	Reach 5	Pumps	1	0	16	0.74	Diesel
2033	Reach 5	Rollers	1	0	150	0.38	Diesel
2033	Reach 5	Scrapers	1	0	175	0.48	Diesel
2033	Reach 5	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2040	Reach 5	Cranes	1	7	360	0.29	Diesel
2040	Reach 5	Cranes	1	10	175	0.29	Diesel
2040	Reach 5	Rubber Tired Loaders	1	10	200	0.36	Diesel
2040	Reach 5	Rubber Tired Loaders	1	7	375	0.36	Diesel
2043	Reach 5	Air Compressors	1	4	80	0.48	Diesel
2043	Reach 5	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2043	Reach 5	Cranes	2	22	100	0.29	Diesel
2043	Reach 5	Cranes	1	13	240	0.29	Diesel
2043	Reach 5	Cranes	1	13	275	0.29	Diesel
2043	Reach 5	Cranes	1	13	335	0.29	Diesel
2043	Reach 5	Cranes	1	13	335	0.29	Diesel
2043	Reach 5	Cranes	1	2	66	0.29	Diesel
2043	Reach 5	Crawler Tractors	1	0	70	0.43	Diesel
2043	Reach 5	Crawler Tractors	1	20	145	0.43	Diesel
2043	Reach 5	Excavators	1	0	128	0.38	Diesel
2043	Reach 5	Excavators	1	0	315	0.38	Diesel
2043	Reach 5	Excavators	1	2	384	0.38	Diesel
2043	Reach 5	Gas Pump	1	1	2	0.69	Gasoline
2043	Reach 5	Graders	1	0	158	0.41	Diesel
2043	Reach 5	Graders	1	1	215	0.41	Diesel
2043	Reach 5	Off-Highway Trucks	3	19	375	0.38	Diesel
2043	Reach 5	Pumps	2	22	215	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2043	Reach 5	Pumps	1	0	16	0.74	Diesel
2043	Reach 5	Pumps	1	14	60	0.74	Diesel
2043	Reach 5	Rollers	1	1	315	0.38	Diesel
2043	Reach 5	Rollers	1	0	150	0.38	Diesel
2043	Reach 5	Rubber Tired Loaders	1	13	160	0.36	Diesel
2043	Reach 5	Rubber Tired Loaders	1	0	145	0.36	Diesel
2043	Reach 5	Scrapers	1	0	175	0.48	Diesel
2043	Reach 5	Scrapers	1	0	450	0.48	Diesel
2043	Reach 5	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2050	Reach 5	Air Compressors	1	3	80	0.48	Diesel
2050	Reach 5	Cranes	1	0	160	0.29	Diesel
2050	Reach 5	Cranes	1	0	240	0.29	Diesel
2050	Reach 5	Cranes	1	1	275	0.29	Diesel
2050	Reach 5	Cranes	1	2	66	0.29	Diesel
2050	Reach 5	Crawler Tractors	1	0	70	0.43	Diesel
2050	Reach 5	Crawler Tractors	1	0	145	0.43	Diesel
2050	Reach 5	Generator Sets	1	0	107	0.74	Diesel
2050	Reach 5	Graders	1	1	158	0.41	Diesel
2050	Reach 5	Graders	1	0	215	0.41	Diesel
2050	Reach 5	Off-Highway Trucks	1	0	375	0.38	Diesel
2050	Reach 5	Plate Compactors	1	0	8	0.43	Diesel
2050	Reach 5	Rollers	1	1	150	0.38	Diesel
2050	Reach 5	Rubber Tired Loaders	1	1	197	0.36	Diesel
2050	Reach 5	Scrapers	1	0	175	0.48	Diesel
2050	Reach 5	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2050	Reach 5	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
2050	Reach 5	Welders	1	0	48	0.45	Diesel
2053	Reach 5	Cranes	1	21	360	0.29	Diesel
2053	Reach 5	Cranes	1	3	175	0.29	Diesel
2053	Reach 5	Rubber Tired Loaders	1	21	200	0.36	Diesel
2060	Reach 5	Crawler Tractors	1	7	70	0.43	Diesel
2060	Reach 5	Crawler Tractors	3	17	145	0.43	Diesel
2060	Reach 5	Crawler Tractors	1	8	410	0.43	Diesel
2060	Reach 5	Excavators	1	14	523	0.38	Diesel
2060	Reach 5	Excavators	1	3	384	0.38	Diesel
2060	Reach 5	Gas Pump	2	18	2	0.69	Gasoline
2060	Reach 5	Generator Sets	3	23	12	0.74	Diesel
2060	Reach 5	Graders	1	0	158	0.41	Diesel
2060	Reach 5	Graders	1	16	215	0.41	Diesel
2060	Reach 5	Off-Highway Trucks	1	5	452	0.38	Diesel
2060	Reach 5	Off-Highway Trucks	2	21	650	0.38	Diesel
2060	Reach 5	Pumps	1	3	16	0.74	Diesel
2060	Reach 5	Rollers	1	14	315	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2060	Reach 5	Rollers	1	0	150	0.38	Diesel
2060	Reach 5	Rubber Tired Loaders	1	5	145	0.36	Diesel
2060	Reach 5	Scrapers	2	13	450	0.48	Diesel
2060	Reach 5	Scrapers	1	3	500	0.48	Diesel
2063	Reach 5	Cranes	1	22	360	0.29	Diesel
2063	Reach 5	Pumps	1	8	210	0.74	Diesel
2070	Reach 5	Crawler Tractors	2	8	24	0.43	Diesel
2070	Reach 5	Crawler Tractors	3	8	145	0.43	Diesel
2070	Reach 5	Crawler Tractors	3	8	410	0.43	Diesel
2070	Reach 5	Graders	2	6	215	0.41	Diesel
2070	Reach 5	Rollers	3	8	240	0.38	Diesel
2070	Reach 5	Scrapers	13	10	450	0.48	Diesel
2070	Reach 5	Tractors/Loaders/Backhoes	1	8	87	0.37	Diesel
2073	Reach 5	Cranes	1	23	360	0.29	Diesel
2073	Reach 5	Crawler Tractors	2	18	82	0.43	Diesel
2073	Reach 5	Excavators	1	22	165	0.38	Diesel
2073	Reach 5	Other construction equipment	2	18	6	0.42	Diesel
2073	Reach 5	Pumps	1	2	210	0.74	Diesel
2073	Reach 5	Rollers	1	22	240	0.38	Diesel
2083	Reach 5	Cranes	1	21	360	0.29	Diesel
2083	Reach 5	Cranes	1	3	175	0.29	Diesel
2083	Reach 5	Rubber Tired Loaders	1	21	200	0.36	Diesel
2103	Reach 5	Cranes	1	23	360	0.29	Diesel
2103	Reach 5	Crawler Tractors	2	18	82	0.43	Diesel
2103	Reach 5	Excavators	1	22	165	0.38	Diesel
2103	Reach 5	Other construction equipment	2	18	6	0.42	Diesel
2103	Reach 5	Pumps	1	2	210	0.74	Diesel
2103	Reach 5	Rollers	1	22	240	0.38	Diesel
2110	Reach 5	Cranes	1	24	360	0.29	Diesel
2110	Reach 5	Crawler Tractors	1	11	82	0.43	Diesel
2110	Reach 5	Rubber Tired Loaders	1	11	65	0.36	Diesel
2110	Reach 5	Rubber Tired Loaders	1	24	200	0.36	Diesel
2110	Reach 5	Welders	1	24	46	0.45	Diesel
2113	Reach 5	Crawler Tractors	2	9	24	0.43	Diesel
2113	Reach 5	Crawler Tractors	2	5	145	0.43	Diesel
2113	Reach 5	Excavators	1	5	384	0.38	Diesel
2113	Reach 5	Graders	1	3	215	0.41	Diesel
2113	Reach 5	Pumps	1	1	16	0.74	Diesel
2113	Reach 5	Rollers	1	5	315	0.38	Diesel
2113	Reach 5	Tractors/Loaders/Backhoes	1	9	87	0.37	Diesel
2213	Reach 5	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2213	Reach 5	Cranes	2	19	100	0.29	Diesel
2213	Reach 5	Crawler Tractors	1	0	145	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2213	Reach 5	Excavators	1	0	128	0.38	Diesel
2213	Reach 5	Graders	1	0	215	0.41	Diesel
2213	Reach 5	Pumps	2	19	215	0.74	Diesel
2213	Reach 5	Pumps	1	0	16	0.74	Diesel
2213	Reach 5	Rollers	1	0	150	0.38	Diesel
2213	Reach 5	Scrapers	1	0	175	0.48	Diesel
2213	Reach 5	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2223	Reach 5	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2223	Reach 5	Cranes	2	19	100	0.29	Diesel
2223	Reach 5	Crawler Tractors	1	0	145	0.43	Diesel
2223	Reach 5	Excavators	1	0	128	0.38	Diesel
2223	Reach 5	Graders	1	0	215	0.41	Diesel
2223	Reach 5	Pumps	2	19	215	0.74	Diesel
2223	Reach 5	Pumps	1	0	16	0.74	Diesel
2223	Reach 5	Rollers	1	0	150	0.38	Diesel
2223	Reach 5	Scrapers	1	0	175	0.48	Diesel
2223	Reach 5	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2243	Reach 5	Cranes	1	22	360	0.29	Diesel
1020	Reach 6	Air Compressors	1	20	80	0.48	Diesel
1020	Reach 6	Cranes	1	8	175	0.29	Diesel
1020	Reach 6	Cranes	1	10	66	0.29	Diesel
1030	Reach 6	Cranes	1	7	240	0.29	Diesel
1030	Reach 6	Cranes	1	24	275	0.29	Diesel
1030	Reach 6	Cranes	1	13	335	0.29	Diesel
1030	Reach 6	Cranes	1	24	335	0.29	Diesel
1030	Reach 6	Crawler Tractors	1	24	145	0.43	Diesel
1030	Reach 6	Off-Highway Trucks	2	24	375	0.38	Diesel
1030	Reach 6	Pumps	1	24	60	0.74	Diesel
1030	Reach 6	Rubber Tired Loaders	1	24	160	0.36	Diesel
1030	Reach 6	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1040	Reach 6	Cranes	1	24	360	0.29	Diesel
1040	Reach 6	Rubber Tired Loaders	1	24	200	0.36	Diesel
1050	Reach 6	Cranes	1	23	360	0.29	Diesel
1060	Reach 6	Cranes	1	23	360	0.29	Diesel
1060	Reach 6	Pumps	2	23	210	0.74	Diesel
1090	Reach 6	Air Compressors	1	2	80	0.48	Diesel
1090	Reach 6	Cement and Mortar Mixers	1	15	18	0.56	Diesel
1090	Reach 6	Cranes	1	15	100	0.29	Diesel
1090	Reach 6	Cranes	1	9	240	0.29	Diesel
1090	Reach 6	Cranes	1	9	275	0.29	Diesel
1090	Reach 6	Cranes	1	9	335	0.29	Diesel
1090	Reach 6	Cranes	1	9	335	0.29	Diesel
1090	Reach 6	Cranes	1	1	66	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1090	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
1090	Reach 6	Crawler Tractors	1	12	145	0.43	Diesel
1090	Reach 6	Excavators	1	0	315	0.38	Diesel
1090	Reach 6	Excavators	1	1	384	0.38	Diesel
1090	Reach 6	Graders	1	0	158	0.41	Diesel
1090	Reach 6	Graders	1	0	215	0.41	Diesel
1090	Reach 6	Off-Highway Trucks	2	19	375	0.38	Diesel
1090	Reach 6	Pumps	1	15	215	0.74	Diesel
1090	Reach 6	Pumps	1	0	16	0.74	Diesel
1090	Reach 6	Pumps	1	9	60	0.74	Diesel
1090	Reach 6	Rollers	1	0	315	0.38	Diesel
1090	Reach 6	Rollers	1	0	150	0.38	Diesel
1090	Reach 6	Rubber Tired Loaders	1	9	160	0.36	Diesel
1090	Reach 6	Scrapers	1	0	450	0.48	Diesel
1090	Reach 6	Tractors/Loaders/Backhoes	2	12	101	0.37	Diesel
1100	Reach 6	Cranes	1	12	360	0.29	Diesel
1100	Reach 6	Pumps	1	12	210	0.74	Diesel
1110	Reach 6	Cranes	1	24	360	0.29	Diesel
1120	Reach 6	Cranes	1	24	360	0.29	Diesel
1130	Reach 6	Cranes	1	24	360	0.29	Diesel
1140	Reach 6	Air Compressors	1	1	80	0.48	Diesel
1140	Reach 6	Cement and Mortar Mixers	3	18	18	0.56	Diesel
1140	Reach 6	Cranes	3	18	100	0.29	Diesel
1140	Reach 6	Cranes	1	1	66	0.29	Diesel
1140	Reach 6	Pumps	3	18	215	0.74	Diesel
1140	Reach 6	Tractors/Loaders/Backhoes	3	18	101	0.37	Diesel
1150	Reach 6	Cranes	1	22	360	0.29	Diesel
1150	Reach 6	Cranes	1	1	175	0.29	Diesel
1150	Reach 6	Pumps	1	5	210	0.74	Diesel
1150	Reach 6	Rubber Tired Loaders	1	9	200	0.36	Diesel
1160	Reach 6	Cranes	1	24	360	0.29	Diesel
1160	Reach 6	Pumps	2	24	210	0.74	Diesel
1170	Reach 6	Air Compressors	1	20	80	0.48	Diesel
1170	Reach 6	Cranes	1	8	175	0.29	Diesel
1170	Reach 6	Cranes	1	10	66	0.29	Diesel
1180	Reach 6	Cranes	1	7	240	0.29	Diesel
1180	Reach 6	Cranes	1	24	275	0.29	Diesel
1180	Reach 6	Cranes	1	13	335	0.29	Diesel
1180	Reach 6	Cranes	1	24	335	0.29	Diesel
1180	Reach 6	Crawler Tractors	1	24	145	0.43	Diesel
1180	Reach 6	Off-Highway Trucks	2	24	375	0.38	Diesel
1180	Reach 6	Pumps	1	24	60	0.74	Diesel
1180	Reach 6	Rubber Tired Loaders	1	24	160	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1180	Reach 6	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1190	Reach 6	Cranes	1	24	360	0.29	Diesel
1190	Reach 6	Rubber Tired Loaders	1	24	200	0.36	Diesel
1200	Reach 6	Air Compressors	1	1	80	0.48	Diesel
1200	Reach 6	Cement and Mortar Mixers	3	18	18	0.56	Diesel
1200	Reach 6	Cranes	3	18	100	0.29	Diesel
1200	Reach 6	Cranes	1	1	66	0.29	Diesel
1200	Reach 6	Pumps	3	18	215	0.74	Diesel
1200	Reach 6	Tractors/Loaders/Backhoes	3	18	101	0.37	Diesel
1210	Reach 6	Cranes	1	23	360	0.29	Diesel
1220	Reach 6	Cranes	1	23	360	0.29	Diesel
1220	Reach 6	Pumps	2	23	210	0.74	Diesel
1250	Reach 6	Cranes	1	24	360	0.29	Diesel
1260	Reach 6	Cranes	1	24	360	0.29	Diesel
1270	Reach 6	Cranes	1	24	360	0.29	Diesel
1270	Reach 6	Pumps	2	24	210	0.74	Diesel
1280	Reach 6	Cranes	2	13	360	0.29	Diesel
1280	Reach 6	Rubber Tired Loaders	1	24	375	0.36	Diesel
1280	Reach 6	Welders	1	24	46	0.45	Diesel
1310	Reach 6	Cranes	1	24	360	0.29	Diesel
1320	Reach 6	Cranes	2	20	360	0.29	Diesel
1320	Reach 6	Pumps	1	2	210	0.74	Diesel
1330	Reach 6	Air Compressors	1	2	80	0.48	Diesel
1330	Reach 6	Cement and Mortar Mixers	1	15	18	0.56	Diesel
1330	Reach 6	Cranes	1	15	100	0.29	Diesel
1330	Reach 6	Cranes	1	9	240	0.29	Diesel
1330	Reach 6	Cranes	1	9	275	0.29	Diesel
1330	Reach 6	Cranes	1	9	335	0.29	Diesel
1330	Reach 6	Cranes	1	9	335	0.29	Diesel
1330	Reach 6	Cranes	1	1	66	0.29	Diesel
1330	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
1330	Reach 6	Crawler Tractors	1	12	145	0.43	Diesel
1330	Reach 6	Excavators	1	0	315	0.38	Diesel
1330	Reach 6	Excavators	1	1	384	0.38	Diesel
1330	Reach 6	Graders	1	0	158	0.41	Diesel
1330	Reach 6	Graders	1	0	215	0.41	Diesel
1330	Reach 6	Off-Highway Trucks	2	19	375	0.38	Diesel
1330	Reach 6	Pumps	1	15	215	0.74	Diesel
1330	Reach 6	Pumps	1	0	16	0.74	Diesel
1330	Reach 6	Pumps	1	9	60	0.74	Diesel
1330	Reach 6	Rollers	1	0	315	0.38	Diesel
1330	Reach 6	Rollers	1	0	150	0.38	Diesel
1330	Reach 6	Rubber Tired Loaders	1	9	160	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1330	Reach 6	Scrapers	1	0	450	0.48	Diesel
1330	Reach 6	Tractors/Loaders/Backhoes	2	12	101	0.37	Diesel
1340	Reach 6	Cranes	1	23	360	0.29	Diesel
1340	Reach 6	Crawler Tractors	2	12	82	0.43	Diesel
1340	Reach 6	Excavators	1	15	165	0.38	Diesel
1340	Reach 6	Other construction equipment	2	12	6	0.42	Diesel
1340	Reach 6	Pumps	1	1	210	0.74	Diesel
1340	Reach 6	Rollers	1	15	240	0.38	Diesel
1350	Reach 6	Cranes	1	22	360	0.29	Diesel
1350	Reach 6	Cranes	1	1	175	0.29	Diesel
1350	Reach 6	Pumps	1	5	210	0.74	Diesel
1350	Reach 6	Rubber Tired Loaders	1	9	200	0.36	Diesel
1360	Reach 6	Cranes	1	21	360	0.29	Diesel
1360	Reach 6	Crawler Tractors	1	23	82	0.43	Diesel
1360	Reach 6	Excavators	1	14	165	0.38	Diesel
1360	Reach 6	Other construction equipment	1	23	6	0.42	Diesel
1360	Reach 6	Pumps	1	1	210	0.74	Diesel
1360	Reach 6	Rollers	1	14	240	0.38	Diesel
1390	Reach 6	Air Compressors	1	9	78	0.48	Diesel
1390	Reach 6	Cranes	1	9	175	0.29	Diesel
1390	Reach 6	Crawler Tractors	1	9	335	0.43	Diesel
1390	Reach 6	Rubber Tired Loaders	1	9	100	0.36	Diesel
1390	Reach 6	Welders	1	19	46	0.45	Diesel
1400	Reach 6	Cranes	2	20	360	0.29	Diesel
1400	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel
1400	Reach 6	Excavators	1	4	165	0.38	Diesel
1400	Reach 6	Other construction equipment	1	8	6	0.42	Diesel
1400	Reach 6	Pumps	1	7	210	0.74	Diesel
1400	Reach 6	Rollers	1	4	240	0.38	Diesel
1410	Reach 6	Cranes	2	20	360	0.29	Diesel
1410	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel
1410	Reach 6	Excavators	1	4	165	0.38	Diesel
1410	Reach 6	Other construction equipment	1	8	6	0.42	Diesel
1410	Reach 6	Pumps	1	7	210	0.74	Diesel
1410	Reach 6	Rollers	1	4	240	0.38	Diesel
1450	Reach 6	Crawler Tractors	1	6	24	0.43	Diesel
1450	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
1450	Reach 6	Crawler Tractors	3	7	145	0.43	Diesel
1450	Reach 6	Crawler Tractors	1	0	410	0.43	Diesel
1450	Reach 6	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
1450	Reach 6	Excavators	1	0	128	0.38	Diesel
1450	Reach 6	Excavators	1	9	384	0.38	Diesel
1450	Reach 6	Generator Sets	1	0	12	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1450	Reach 6	Graders	1	5	215	0.41	Diesel
1450	Reach 6	Off-Highway Trucks	1	5	375	0.38	Diesel
1450	Reach 6	Pumps	1	3	16	0.74	Diesel
1450	Reach 6	Rollers	1	0	240	0.38	Diesel
1450	Reach 6	Rollers	1	6	315	0.38	Diesel
1450	Reach 6	Rollers	1	1	150	0.38	Diesel
1450	Reach 6	Scrapers	1	3	175	0.48	Diesel
1450	Reach 6	Scrapers	1	2	450	0.48	Diesel
1450	Reach 6	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
1460	Reach 6	Crawler Tractors	1	4	24	0.43	Diesel
1460	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
1460	Reach 6	Crawler Tractors	2	10	145	0.43	Diesel
1460	Reach 6	Crawler Tractors	1	0	410	0.43	Diesel
1460	Reach 6	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
1460	Reach 6	Excavators	1	0	128	0.38	Diesel
1460	Reach 6	Excavators	1	8	384	0.38	Diesel
1460	Reach 6	Generator Sets	1	0	12	0.74	Diesel
1460	Reach 6	Graders	1	5	215	0.41	Diesel
1460	Reach 6	Off-Highway Trucks	1	5	375	0.38	Diesel
1460	Reach 6	Pumps	1	3	16	0.74	Diesel
1460	Reach 6	Rollers	1	0	240	0.38	Diesel
1460	Reach 6	Rollers	1	6	315	0.38	Diesel
1460	Reach 6	Rollers	1	1	150	0.38	Diesel
1460	Reach 6	Scrapers	1	3	175	0.48	Diesel
1460	Reach 6	Scrapers	1	2	450	0.48	Diesel
1460	Reach 6	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
1650	Reach 6	Cranes	1	1	360	0.29	Diesel
1650	Reach 6	Cranes	1	2	360	0.29	Diesel
1650	Reach 6	Cranes	1	2	175	0.29	Diesel
1650	Reach 6	Crawler Tractors	1	2	335	0.43	Diesel
1650	Reach 6	Excavators	1	2	165	0.38	Diesel
1650	Reach 6	Rubber Tired Loaders	1	2	100	0.36	Diesel
1650	Reach 6	Rubber Tired Loaders	1	2	375	0.36	Diesel
1650	Reach 6	Welders	1	22	46	0.45	Diesel
1660	Reach 6	Cranes	1	1	360	0.29	Diesel
1660	Reach 6	Cranes	1	2	360	0.29	Diesel
1660	Reach 6	Cranes	1	2	175	0.29	Diesel
1660	Reach 6	Crawler Tractors	1	2	335	0.43	Diesel
1660	Reach 6	Excavators	1	2	165	0.38	Diesel
1660	Reach 6	Rubber Tired Loaders	1	2	100	0.36	Diesel
1660	Reach 6	Rubber Tired Loaders	1	2	375	0.36	Diesel
1660	Reach 6	Welders	1	22	46	0.45	Diesel
1880	Reach 6	Cranes	2	13	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1880	Reach 6	Rubber Tired Loaders	1	24	375	0.36	Diesel
1880	Reach 6	Welders	1	24	46	0.45	Diesel
1890	Reach 6	Cranes	1	18	360	0.29	Diesel
1890	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel
1890	Reach 6	Rubber Tired Loaders	1	8	65	0.36	Diesel
1890	Reach 6	Rubber Tired Loaders	1	18	200	0.36	Diesel
1890	Reach 6	Welders	1	18	46	0.45	Diesel
2010	Reach 6	Crawler Tractors	1	15	335	0.43	Diesel
2010	Reach 6	Graders	1	15	200	0.41	Diesel
2010	Reach 6	Off-Highway Trucks	2	15	450	0.38	Diesel
2010	Reach 6	Rollers	2	15	240	0.38	Diesel
2010	Reach 6	Rubber Tired Loaders	1	15	375	0.36	Diesel
2033	Reach 6	Air Compressors	1	1	80	0.48	Diesel
2033	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2033	Reach 6	Cranes	2	19	100	0.29	Diesel
2033	Reach 6	Cranes	1	0	66	0.29	Diesel
2033	Reach 6	Crawler Tractors	1	0	145	0.43	Diesel
2033	Reach 6	Excavators	1	0	128	0.38	Diesel
2033	Reach 6	Graders	1	0	215	0.41	Diesel
2033	Reach 6	Pumps	2	19	215	0.74	Diesel
2033	Reach 6	Pumps	1	0	16	0.74	Diesel
2033	Reach 6	Rollers	1	0	150	0.38	Diesel
2033	Reach 6	Scrapers	1	0	175	0.48	Diesel
2033	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2040	Reach 6	Cranes	1	6	360	0.29	Diesel
2040	Reach 6	Cranes	1	8	175	0.29	Diesel
2040	Reach 6	Rubber Tired Loaders	1	8	200	0.36	Diesel
2040	Reach 6	Rubber Tired Loaders	1	6	375	0.36	Diesel
2043	Reach 6	Air Compressors	1	4	80	0.48	Diesel
2043	Reach 6	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2043	Reach 6	Cranes	2	22	100	0.29	Diesel
2043	Reach 6	Cranes	1	13	240	0.29	Diesel
2043	Reach 6	Cranes	1	13	275	0.29	Diesel
2043	Reach 6	Cranes	1	13	335	0.29	Diesel
2043	Reach 6	Cranes	1	13	335	0.29	Diesel
2043	Reach 6	Cranes	1	2	66	0.29	Diesel
2043	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
2043	Reach 6	Crawler Tractors	1	20	145	0.43	Diesel
2043	Reach 6	Excavators	1	0	128	0.38	Diesel
2043	Reach 6	Excavators	1	0	315	0.38	Diesel
2043	Reach 6	Excavators	1	2	384	0.38	Diesel
2043	Reach 6	Gas Pump	1	1	2	0.69	Gasoline
2043	Reach 6	Graders	1	0	158	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2043	Reach 6	Graders	1	1	215	0.41	Diesel
2043	Reach 6	Off-Highway Trucks	3	19	375	0.38	Diesel
2043	Reach 6	Pumps	2	22	215	0.74	Diesel
2043	Reach 6	Pumps	1	0	16	0.74	Diesel
2043	Reach 6	Pumps	1	14	60	0.74	Diesel
2043	Reach 6	Rollers	1	1	315	0.38	Diesel
2043	Reach 6	Rollers	1	0	150	0.38	Diesel
2043	Reach 6	Rubber Tired Loaders	1	13	160	0.36	Diesel
2043	Reach 6	Rubber Tired Loaders	1	0	145	0.36	Diesel
2043	Reach 6	Scrapers	1	0	175	0.48	Diesel
2043	Reach 6	Scrapers	1	0	450	0.48	Diesel
2043	Reach 6	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2050	Reach 6	Air Compressors	1	3	80	0.48	Diesel
2050	Reach 6	Air Compressors	1	4	115	0.48	Diesel
2050	Reach 6	Cranes	1	0	160	0.29	Diesel
2050	Reach 6	Cranes	1	6	240	0.29	Diesel
2050	Reach 6	Cranes	1	1	275	0.29	Diesel
2050	Reach 6	Cranes	1	2	335	0.29	Diesel
2050	Reach 6	Cranes	1	4	375	0.29	Diesel
2050	Reach 6	Cranes	1	6	66	0.29	Diesel
2050	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
2050	Reach 6	Crawler Tractors	1	4	145	0.43	Diesel
2050	Reach 6	Crawler Tractors	1	1	410	0.43	Diesel
2050	Reach 6	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2050	Reach 6	Excavators	1	0	128	0.38	Diesel
2050	Reach 6	Excavators	1	1	523	0.38	Diesel
2050	Reach 6	Excavators	1	0	315	0.38	Diesel
2050	Reach 6	Excavators	1	0	384	0.38	Diesel
2050	Reach 6	Gas Pump	1	0	2	0.69	Gasoline
2050	Reach 6	Generator Sets	1	15	12	0.74	Diesel
2050	Reach 6	Generator Sets	1	4	23	0.74	Diesel
2050	Reach 6	Generator Sets	1	0	107	0.74	Diesel
2050	Reach 6	Graders	1	1	158	0.41	Diesel
2050	Reach 6	Graders	1	2	215	0.41	Diesel
2050	Reach 6	Off-Highway Trucks	1	0	375	0.38	Diesel
2050	Reach 6	Off-Highway Trucks	1	0	452	0.38	Diesel
2050	Reach 6	Off-Highway Trucks	1	2	650	0.38	Diesel
2050	Reach 6	Other construction equipment	1	4	325	0.42	Diesel
2050	Reach 6	Plate Compactors	1	0	8	0.43	Diesel
2050	Reach 6	Pumps	1	1	16	0.74	Diesel
2050	Reach 6	Pumps	1	0	60	0.74	Diesel
2050	Reach 6	Rollers	1	1	240	0.38	Diesel
2050	Reach 6	Rollers	1	1	315	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2050	Reach 6	Rollers	1	2	150	0.38	Diesel
2050	Reach 6	Rollers	1	0	18	0.38	Diesel
2050	Reach 6	Rubber Tired Loaders	1	1	197	0.36	Diesel
2050	Reach 6	Rubber Tired Loaders	1	0	211	0.36	Diesel
2050	Reach 6	Rubber Tired Loaders	1	0	501	0.36	Diesel
2050	Reach 6	Rubber Tired Loaders	1	0	145	0.36	Diesel
2050	Reach 6	Scrapers	1	1	175	0.48	Diesel
2050	Reach 6	Scrapers	1	3	450	0.48	Diesel
2050	Reach 6	Scrapers	1	1	500	0.48	Diesel
2050	Reach 6	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2050	Reach 6	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
2050	Reach 6	Welders	1	4	48	0.45	Diesel
2053	Reach 6	Cranes	1	22	360	0.29	Diesel
2053	Reach 6	Cranes	1	3	175	0.29	Diesel
2053	Reach 6	Rubber Tired Loaders	1	22	200	0.36	Diesel
2060	Reach 6	Crawler Tractors	1	12	70	0.43	Diesel
2060	Reach 6	Crawler Tractors	4	18	145	0.43	Diesel
2060	Reach 6	Crawler Tractors	1	12	410	0.43	Diesel
2060	Reach 6	Excavators	1	19	523	0.38	Diesel
2060	Reach 6	Excavators	1	5	384	0.38	Diesel
2060	Reach 6	Gas Pump	3	24	2	0.69	Gasoline
2060	Reach 6	Generator Sets	5	19	12	0.74	Diesel
2060	Reach 6	Graders	1	0	158	0.41	Diesel
2060	Reach 6	Graders	2	12	215	0.41	Diesel
2060	Reach 6	Off-Highway Trucks	1	8	452	0.38	Diesel
2060	Reach 6	Off-Highway Trucks	3	19	650	0.38	Diesel
2060	Reach 6	Pumps	1	4	16	0.74	Diesel
2060	Reach 6	Rollers	1	19	315	0.38	Diesel
2060	Reach 6	Rollers	1	1	150	0.38	Diesel
2060	Reach 6	Rubber Tired Loaders	1	9	145	0.36	Diesel
2060	Reach 6	Scrapers	2	19	450	0.48	Diesel
2060	Reach 6	Scrapers	1	4	500	0.48	Diesel
2063	Reach 6	Cranes	1	23	360	0.29	Diesel
2063	Reach 6	Pumps	1	8	210	0.74	Diesel
2070	Reach 6	Crawler Tractors	2	6	24	0.43	Diesel
2070	Reach 6	Crawler Tractors	2	10	145	0.43	Diesel
2070	Reach 6	Crawler Tractors	2	10	410	0.43	Diesel
2070	Reach 6	Graders	1	10	215	0.41	Diesel
2070	Reach 6	Rollers	2	10	240	0.38	Diesel
2070	Reach 6	Scrapers	10	10	450	0.48	Diesel
2070	Reach 6	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
2073	Reach 6	Cranes	1	22	360	0.29	Diesel
2073	Reach 6	Crawler Tractors	2	18	82	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2073	Reach 6	Excavators	1	21	165	0.38	Diesel
2073	Reach 6	Other construction equipment	2	18	6	0.42	Diesel
2073	Reach 6	Pumps	1	2	210	0.74	Diesel
2073	Reach 6	Rollers	1	21	240	0.38	Diesel
2080	Reach 6	Crawler Tractors	1	5	24	0.43	Diesel
2080	Reach 6	Generator Sets	1	5	713	0.74	Diesel
2080	Reach 6	Rubber Tired Loaders	1	16	211	0.36	Diesel
2080	Reach 6	Welders	1	1	48	0.45	Diesel
2083	Reach 6	Cranes	1	22	360	0.29	Diesel
2083	Reach 6	Cranes	1	3	175	0.29	Diesel
2083	Reach 6	Rubber Tired Loaders	1	22	200	0.36	Diesel
2093	Reach 6	Cranes	1	23	360	0.29	Diesel
2093	Reach 6	Pumps	1	8	210	0.74	Diesel
2103	Reach 6	Cranes	1	22	360	0.29	Diesel
2103	Reach 6	Crawler Tractors	2	18	82	0.43	Diesel
2103	Reach 6	Excavators	1	21	165	0.38	Diesel
2103	Reach 6	Other construction equipment	2	18	6	0.42	Diesel
2103	Reach 6	Pumps	1	2	210	0.74	Diesel
2103	Reach 6	Rollers	1	21	240	0.38	Diesel
2110	Reach 6	Cranes	1	18	360	0.29	Diesel
2110	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel
2110	Reach 6	Rubber Tired Loaders	1	8	65	0.36	Diesel
2110	Reach 6	Rubber Tired Loaders	1	18	200	0.36	Diesel
2110	Reach 6	Welders	1	18	46	0.45	Diesel
2113	Reach 6	Crawler Tractors	1	9	24	0.43	Diesel
2113	Reach 6	Crawler Tractors	2	5	145	0.43	Diesel
2113	Reach 6	Excavators	1	5	384	0.38	Diesel
2113	Reach 6	Graders	1	3	215	0.41	Diesel
2113	Reach 6	Pumps	1	1	16	0.74	Diesel
2113	Reach 6	Rollers	1	5	315	0.38	Diesel
2113	Reach 6	Tractors/Loaders/Backhoes	1	5	87	0.37	Diesel
2123	Reach 6	Air Compressors	1	1	80	0.48	Diesel
2123	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2123	Reach 6	Cranes	2	19	100	0.29	Diesel
2123	Reach 6	Cranes	1	0	66	0.29	Diesel
2123	Reach 6	Crawler Tractors	1	0	145	0.43	Diesel
2123	Reach 6	Excavators	1	0	128	0.38	Diesel
2123	Reach 6	Graders	1	0	215	0.41	Diesel
2123	Reach 6	Pumps	2	19	215	0.74	Diesel
2123	Reach 6	Pumps	1	0	16	0.74	Diesel
2123	Reach 6	Rollers	1	0	150	0.38	Diesel
2123	Reach 6	Scrapers	1	0	175	0.48	Diesel
2123	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2133	Reach 6	Air Compressors	1	4	80	0.48	Diesel
2133	Reach 6	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2133	Reach 6	Cranes	2	22	100	0.29	Diesel
2133	Reach 6	Cranes	1	13	240	0.29	Diesel
2133	Reach 6	Cranes	1	13	275	0.29	Diesel
2133	Reach 6	Cranes	1	13	335	0.29	Diesel
2133	Reach 6	Cranes	1	13	335	0.29	Diesel
2133	Reach 6	Cranes	1	2	66	0.29	Diesel
2133	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
2133	Reach 6	Crawler Tractors	1	21	145	0.43	Diesel
2133	Reach 6	Excavators	1	0	315	0.38	Diesel
2133	Reach 6	Excavators	1	3	384	0.38	Diesel
2133	Reach 6	Gas Pump	1	1	2	0.69	Gasoline
2133	Reach 6	Generator Sets	1	4	12	0.74	Diesel
2133	Reach 6	Graders	1	0	158	0.41	Diesel
2133	Reach 6	Graders	1	2	215	0.41	Diesel
2133	Reach 6	Off-Highway Trucks	3	19	375	0.38	Diesel
2133	Reach 6	Pavers	1	0	224	0.42	Diesel
2133	Reach 6	Pumps	2	22	215	0.74	Diesel
2133	Reach 6	Pumps	1	1	16	0.74	Diesel
2133	Reach 6	Pumps	1	14	60	0.74	Diesel
2133	Reach 6	Rollers	1	0	110	0.38	Diesel
2133	Reach 6	Rollers	1	0	131	0.38	Diesel
2133	Reach 6	Rollers	1	1	240	0.38	Diesel
2133	Reach 6	Rollers	1	1	315	0.38	Diesel
2133	Reach 6	Rollers	1	1	150	0.38	Diesel
2133	Reach 6	Rollers	1	0	18	0.38	Diesel
2133	Reach 6	Rubber Tired Loaders	1	13	160	0.36	Diesel
2133	Reach 6	Rubber Tired Loaders	1	0	145	0.36	Diesel
2133	Reach 6	Scrapers	1	0	450	0.48	Diesel
2133	Reach 6	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2133	Reach 6	Tractors/Loaders/Backhoes	3	19	101	0.37	Diesel
2143	Reach 6	Cranes	3	17	360	0.29	Diesel
2143	Reach 6	Cranes	1	3	175	0.29	Diesel
2143	Reach 6	Pumps	1	11	210	0.74	Diesel
2143	Reach 6	Rubber Tired Loaders	1	22	200	0.36	Diesel
2163	Reach 6	Cranes	1	22	360	0.29	Diesel
2163	Reach 6	Crawler Tractors	2	18	82	0.43	Diesel
2163	Reach 6	Excavators	1	21	165	0.38	Diesel
2163	Reach 6	Other construction equipment	2	18	6	0.42	Diesel
2163	Reach 6	Pumps	1	2	210	0.74	Diesel
2163	Reach 6	Rollers	1	21	240	0.38	Diesel
2173	Reach 6	Cranes	1	22	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2173	Reach 6	Cranes	1	3	175	0.29	Diesel
2173	Reach 6	Rubber Tired Loaders	1	22	200	0.36	Diesel
2183	Reach 6	Cranes	1	22	360	0.29	Diesel
2183	Reach 6	Pumps	1	8	210	0.74	Diesel
2193	Reach 6	Cranes	1	22	360	0.29	Diesel
2193	Reach 6	Crawler Tractors	2	18	82	0.43	Diesel
2193	Reach 6	Excavators	1	21	165	0.38	Diesel
2193	Reach 6	Other construction equipment	2	18	6	0.42	Diesel
2193	Reach 6	Pumps	1	2	210	0.74	Diesel
2193	Reach 6	Rollers	1	21	240	0.38	Diesel
2203	Reach 6	Crawler Tractors	1	9	24	0.43	Diesel
2203	Reach 6	Crawler Tractors	2	5	145	0.43	Diesel
2203	Reach 6	Excavators	1	5	384	0.38	Diesel
2203	Reach 6	Graders	1	3	215	0.41	Diesel
2203	Reach 6	Pumps	1	1	16	0.74	Diesel
2203	Reach 6	Rollers	1	5	315	0.38	Diesel
2203	Reach 6	Tractors/Loaders/Backhoes	1	5	87	0.37	Diesel
2213	Reach 6	Air Compressors	1	1	80	0.48	Diesel
2213	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2213	Reach 6	Cranes	2	19	100	0.29	Diesel
2213	Reach 6	Cranes	1	0	66	0.29	Diesel
2213	Reach 6	Crawler Tractors	1	1	145	0.43	Diesel
2213	Reach 6	Excavators	1	1	128	0.38	Diesel
2213	Reach 6	Graders	1	1	215	0.41	Diesel
2213	Reach 6	Pumps	2	19	215	0.74	Diesel
2213	Reach 6	Pumps	1	1	16	0.74	Diesel
2213	Reach 6	Rollers	1	1	150	0.38	Diesel
2213	Reach 6	Scrapers	1	1	175	0.48	Diesel
2213	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2233	Reach 6	Air Compressors	1	1	80	0.48	Diesel
2233	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2233	Reach 6	Cranes	2	19	100	0.29	Diesel
2233	Reach 6	Cranes	1	0	66	0.29	Diesel
2233	Reach 6	Crawler Tractors	1	1	145	0.43	Diesel
2233	Reach 6	Excavators	1	1	128	0.38	Diesel
2233	Reach 6	Graders	1	1	215	0.41	Diesel
2233	Reach 6	Pumps	2	19	215	0.74	Diesel
2233	Reach 6	Pumps	1	1	16	0.74	Diesel
2233	Reach 6	Rollers	1	1	150	0.38	Diesel
2233	Reach 6	Scrapers	1	1	175	0.48	Diesel
2233	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2243	Reach 6	Pumps	1	8	210	0.74	Diesel
2303	Reach 6	Air Compressors	1	1	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2303	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2303	Reach 6	Cranes	2	19	100	0.29	Diesel
2303	Reach 6	Cranes	1	0	66	0.29	Diesel
2303	Reach 6	Crawler Tractors	1	0	145	0.43	Diesel
2303	Reach 6	Excavators	1	0	128	0.38	Diesel
2303	Reach 6	Graders	1	0	215	0.41	Diesel
2303	Reach 6	Pumps	2	19	215	0.74	Diesel
2303	Reach 6	Pumps	1	0	16	0.74	Diesel
2303	Reach 6	Rollers	1	0	150	0.38	Diesel
2303	Reach 6	Scrapers	1	0	175	0.48	Diesel
2303	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2313	Reach 6	Crawler Tractors	1	4	24	0.43	Diesel
2313	Reach 6	Crawler Tractors	1	0	70	0.43	Diesel
2313	Reach 6	Crawler Tractors	1	10	145	0.43	Diesel
2313	Reach 6	Crawler Tractors	1	0	410	0.43	Diesel
2313	Reach 6	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2313	Reach 6	Excavators	1	0	128	0.38	Diesel
2313	Reach 6	Excavators	1	4	384	0.38	Diesel
2313	Reach 6	Generator Sets	1	0	12	0.74	Diesel
2313	Reach 6	Graders	1	2	215	0.41	Diesel
2313	Reach 6	Off-Highway Trucks	1	2	375	0.38	Diesel
2313	Reach 6	Pumps	1	1	16	0.74	Diesel
2313	Reach 6	Rollers	1	0	240	0.38	Diesel
2313	Reach 6	Rollers	1	3	315	0.38	Diesel
2313	Reach 6	Rollers	1	1	150	0.38	Diesel
2313	Reach 6	Scrapers	1	1	175	0.48	Diesel
2313	Reach 6	Scrapers	1	1	450	0.48	Diesel
2313	Reach 6	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2323	Reach 6	Air Compressors	1	1	80	0.48	Diesel
2323	Reach 6	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2323	Reach 6	Cranes	2	19	100	0.29	Diesel
2323	Reach 6	Cranes	1	0	66	0.29	Diesel
2323	Reach 6	Crawler Tractors	1	0	145	0.43	Diesel
2323	Reach 6	Excavators	1	0	128	0.38	Diesel
2323	Reach 6	Graders	1	0	215	0.41	Diesel
2323	Reach 6	Pumps	2	19	215	0.74	Diesel
2323	Reach 6	Pumps	1	0	16	0.74	Diesel
2323	Reach 6	Rollers	1	0	150	0.38	Diesel
2323	Reach 6	Scrapers	1	0	175	0.48	Diesel
2323	Reach 6	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2333	Reach 6	Cranes	2	20	360	0.29	Diesel
2333	Reach 6	Cranes	2	20	360	0.29	Diesel
2333	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2333	Reach 6	Crawler Tractors	1	8	82	0.43	Diesel
2333	Reach 6	Excavators	1	4	165	0.38	Diesel
2333	Reach 6	Excavators	1	4	165	0.38	Diesel
2333	Reach 6	Other construction equipment	1	8	6	0.42	Diesel
2333	Reach 6	Other construction equipment	1	8	6	0.42	Diesel
2333	Reach 6	Pumps	1	7	210	0.74	Diesel
2333	Reach 6	Pumps	1	7	210	0.74	Diesel
2333	Reach 6	Rollers	1	4	240	0.38	Diesel
2333	Reach 6	Rollers	1	4	240	0.38	Diesel
1020	Reaches 123	Air Compressors	1	20	80	0.48	Diesel
1020	Reaches 123	Cranes	1	8	175	0.29	Diesel
1020	Reaches 123	Cranes	1	10	66	0.29	Diesel
1030	Reaches 123	Cranes	1	24	240	0.29	Diesel
1030	Reaches 123	Cranes	1	24	275	0.29	Diesel
1030	Reaches 123	Cranes	1	23	335	0.29	Diesel
1030	Reaches 123	Cranes	1	24	335	0.29	Diesel
1030	Reaches 123	Crawler Tractors	1	24	145	0.43	Diesel
1030	Reaches 123	Off-Highway Trucks	4	24	375	0.38	Diesel
1030	Reaches 123	Pumps	1	24	60	0.74	Diesel
1030	Reaches 123	Rubber Tired Loaders	1	24	160	0.36	Diesel
1030	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1040	Reaches 123	Cranes	1	23	360	0.29	Diesel
1040	Reaches 123	Rubber Tired Loaders	1	23	200	0.36	Diesel
1050	Reaches 123	Cranes	1	23	360	0.29	Diesel
1060	Reaches 123	Cranes	1	23	360	0.29	Diesel
1060	Reaches 123	Pumps	2	23	210	0.74	Diesel
1100	Reaches 123	Cranes	1	24	360	0.29	Diesel
1100	Reaches 123	Pumps	1	24	210	0.74	Diesel
1110	Reaches 123	Cranes	1	24	360	0.29	Diesel
1120	Reaches 123	Cranes	1	12	360	0.29	Diesel
1130	Reaches 123	Cranes	1	24	360	0.29	Diesel
1140	Reaches 123	Air Compressors	1	1	80	0.48	Diesel
1140	Reaches 123	Cement and Mortar Mixers	1	24	18	0.56	Diesel
1140	Reaches 123	Cranes	1	24	100	0.29	Diesel
1140	Reaches 123	Cranes	1	1	66	0.29	Diesel
1140	Reaches 123	Pumps	1	24	215	0.74	Diesel
1140	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1160	Reaches 123	Cranes	1	23	360	0.29	Diesel
1160	Reaches 123	Pumps	2	23	210	0.74	Diesel
1170	Reaches 123	Air Compressors	1	20	80	0.48	Diesel
1170	Reaches 123	Cranes	1	8	175	0.29	Diesel
1170	Reaches 123	Cranes	1	10	66	0.29	Diesel
1180	Reaches 123	Cranes	1	24	240	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1180	Reaches 123	Cranes	1	24	275	0.29	Diesel
1180	Reaches 123	Cranes	1	23	335	0.29	Diesel
1180	Reaches 123	Cranes	1	24	335	0.29	Diesel
1180	Reaches 123	Crawler Tractors	1	24	145	0.43	Diesel
1180	Reaches 123	Off-Highway Trucks	4	24	375	0.38	Diesel
1180	Reaches 123	Pumps	1	24	60	0.74	Diesel
1180	Reaches 123	Rubber Tired Loaders	1	24	160	0.36	Diesel
1180	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
1190	Reaches 123	Cranes	1	23	360	0.29	Diesel
1190	Reaches 123	Rubber Tired Loaders	1	23	200	0.36	Diesel
1200	Reaches 123	Air Compressors	1	1	80	0.48	Diesel
1200	Reaches 123	Cement and Mortar Mixers	1	16	18	0.56	Diesel
1200	Reaches 123	Cranes	1	16	100	0.29	Diesel
1200	Reaches 123	Cranes	1	1	66	0.29	Diesel
1200	Reaches 123	Pumps	1	16	215	0.74	Diesel
1200	Reaches 123	Tractors/Loaders/Backhoes	1	16	101	0.37	Diesel
1210	Reaches 123	Cranes	1	23	360	0.29	Diesel
1220	Reaches 123	Cranes	1	23	360	0.29	Diesel
1220	Reaches 123	Pumps	2	23	210	0.74	Diesel
1230	Reaches 123	Cranes	1	24	360	0.29	Diesel
1240	Reaches 123	Cranes	1	8	360	0.29	Diesel
1250	Reaches 123	Cranes	1	24	360	0.29	Diesel
1260	Reaches 123	Cranes	1	24	360	0.29	Diesel
1270	Reaches 123	Cranes	1	23	360	0.29	Diesel
1270	Reaches 123	Pumps	2	23	210	0.74	Diesel
1280	Reaches 123	Cranes	2	13	360	0.29	Diesel
1280	Reaches 123	Rubber Tired Loaders	1	24	375	0.36	Diesel
1280	Reaches 123	Welders	1	24	46	0.45	Diesel
1310	Reaches 123	Cranes	1	24	360	0.29	Diesel
1320	Reaches 123	Cranes	1	24	360	0.29	Diesel
1320	Reaches 123	Pumps	1	24	210	0.74	Diesel
1330	Reaches 123	Cranes	1	24	360	0.29	Diesel
1330	Reaches 123	Crawler Tractors	1	17	82	0.43	Diesel
1330	Reaches 123	Excavators	1	8	165	0.38	Diesel
1330	Reaches 123	Other construction equipment	1	17	6	0.42	Diesel
1330	Reaches 123	Pumps	1	3	210	0.74	Diesel
1330	Reaches 123	Rollers	1	8	240	0.38	Diesel
1340	Reaches 123	Cranes	1	23	360	0.29	Diesel
1340	Reaches 123	Crawler Tractors	1	19	82	0.43	Diesel
1340	Reaches 123	Excavators	1	10	165	0.38	Diesel
1340	Reaches 123	Other construction equipment	1	19	6	0.42	Diesel
1340	Reaches 123	Pumps	1	3	210	0.74	Diesel
1340	Reaches 123	Rollers	1	10	240	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1390	Reaches 123	Air Compressors	1	9	78	0.48	Diesel
1390	Reaches 123	Cranes	1	9	175	0.29	Diesel
1390	Reaches 123	Crawler Tractors	1	9	335	0.43	Diesel
1390	Reaches 123	Rubber Tired Loaders	1	9	100	0.36	Diesel
1390	Reaches 123	Welders	1	19	46	0.45	Diesel
1650	Reaches 123	Cranes	1	2	360	0.29	Diesel
1650	Reaches 123	Cranes	1	3	360	0.29	Diesel
1650	Reaches 123	Cranes	1	3	175	0.29	Diesel
1650	Reaches 123	Crawler Tractors	1	3	335	0.43	Diesel
1650	Reaches 123	Excavators	1	3	165	0.38	Diesel
1650	Reaches 123	Rubber Tired Loaders	1	3	100	0.36	Diesel
1650	Reaches 123	Rubber Tired Loaders	1	3	375	0.36	Diesel
1650	Reaches 123	Welders	1	24	46	0.45	Diesel
1660	Reaches 123	Cranes	1	1	360	0.29	Diesel
1660	Reaches 123	Cranes	1	3	360	0.29	Diesel
1660	Reaches 123	Cranes	1	3	175	0.29	Diesel
1660	Reaches 123	Crawler Tractors	1	3	335	0.43	Diesel
1660	Reaches 123	Excavators	1	3	165	0.38	Diesel
1660	Reaches 123	Rubber Tired Loaders	1	3	100	0.36	Diesel
1660	Reaches 123	Rubber Tired Loaders	1	3	375	0.36	Diesel
1660	Reaches 123	Welders	1	24	46	0.45	Diesel
1670	Reaches 123	Cranes	1	2	360	0.29	Diesel
1670	Reaches 123	Cranes	1	24	360	0.29	Diesel
1670	Reaches 123	Rubber Tired Loaders	1	24	200	0.36	Diesel
1670	Reaches 123	Welders	2	24	46	0.45	Diesel
1880	Reaches 123	Cranes	2	13	360	0.29	Diesel
1880	Reaches 123	Rubber Tired Loaders	1	24	375	0.36	Diesel
1880	Reaches 123	Welders	1	24	46	0.45	Diesel
1890	Reaches 123	Cranes	1	24	360	0.29	Diesel
1890	Reaches 123	Crawler Tractors	1	12	82	0.43	Diesel
1890	Reaches 123	Rubber Tired Loaders	1	12	65	0.36	Diesel
1890	Reaches 123	Rubber Tired Loaders	1	24	200	0.36	Diesel
1890	Reaches 123	Welders	1	24	46	0.45	Diesel
1900	Reaches 123	Cranes	2	13	360	0.29	Diesel
1900	Reaches 123	Rubber Tired Loaders	1	24	375	0.36	Diesel
1900	Reaches 123	Welders	1	24	46	0.45	Diesel
1910	Reaches 123	Cranes	1	24	360	0.29	Diesel
1910	Reaches 123	Crawler Tractors	1	11	82	0.43	Diesel
1910	Reaches 123	Rubber Tired Loaders	1	11	65	0.36	Diesel
1910	Reaches 123	Rubber Tired Loaders	1	24	200	0.36	Diesel
1910	Reaches 123	Welders	1	24	46	0.45	Diesel
2010	Reaches 123	Crawler Tractors	1	8	335	0.43	Diesel
2010	Reaches 123	Graders	1	8	200	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2010	Reaches 123	Off-Highway Trucks	1	16	450	0.38	Diesel
2010	Reaches 123	Rollers	1	16	240	0.38	Diesel
2010	Reaches 123	Rubber Tired Loaders	1	8	375	0.36	Diesel
2033	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2033	Reaches 123	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2033	Reaches 123	Cranes	2	19	100	0.29	Diesel
2033	Reaches 123	Cranes	1	1	66	0.29	Diesel
2033	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2033	Reaches 123	Excavators	1	1	128	0.38	Diesel
2033	Reaches 123	Graders	1	1	215	0.41	Diesel
2033	Reaches 123	Pumps	2	19	215	0.74	Diesel
2033	Reaches 123	Pumps	1	1	16	0.74	Diesel
2033	Reaches 123	Rollers	1	1	150	0.38	Diesel
2033	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2033	Reaches 123	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2040	Reaches 123	Cranes	1	6	360	0.29	Diesel
2040	Reaches 123	Cranes	1	8	175	0.29	Diesel
2040	Reaches 123	Rubber Tired Loaders	1	8	200	0.36	Diesel
2040	Reaches 123	Rubber Tired Loaders	1	6	375	0.36	Diesel
2043	Reaches 123	Air Compressors	1	5	80	0.48	Diesel
2043	Reaches 123	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2043	Reaches 123	Cranes	2	22	100	0.29	Diesel
2043	Reaches 123	Cranes	1	15	240	0.29	Diesel
2043	Reaches 123	Cranes	1	15	275	0.29	Diesel
2043	Reaches 123	Cranes	1	14	335	0.29	Diesel
2043	Reaches 123	Cranes	1	15	335	0.29	Diesel
2043	Reaches 123	Cranes	1	3	66	0.29	Diesel
2043	Reaches 123	Crawler Tractors	1	1	70	0.43	Diesel
2043	Reaches 123	Crawler Tractors	1	23	145	0.43	Diesel
2043	Reaches 123	Excavators	1	0	128	0.38	Diesel
2043	Reaches 123	Excavators	1	0	315	0.38	Diesel
2043	Reaches 123	Excavators	1	2	384	0.38	Diesel
2043	Reaches 123	Gas Pump	1	2	2	0.69	Gasoline
2043	Reaches 123	Graders	1	0	158	0.41	Diesel
2043	Reaches 123	Graders	1	1	215	0.41	Diesel
2043	Reaches 123	Off-Highway Trucks	2	17	375	0.38	Diesel
2043	Reaches 123	Pumps	2	22	215	0.74	Diesel
2043	Reaches 123	Pumps	1	1	16	0.74	Diesel
2043	Reaches 123	Pumps	1	15	60	0.74	Diesel
2043	Reaches 123	Rollers	1	1	315	0.38	Diesel
2043	Reaches 123	Rollers	1	0	150	0.38	Diesel
2043	Reaches 123	Rubber Tired Loaders	1	15	160	0.36	Diesel
2043	Reaches 123	Rubber Tired Loaders	1	0	145	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2043	Reaches 123	Scrapers	1	0	175	0.48	Diesel
2043	Reaches 123	Scrapers	1	0	450	0.48	Diesel
2043	Reaches 123	Tractors/Loaders/Backhoes	3	20	101	0.37	Diesel
2050	Reaches 123	Air Compressors	1	3	80	0.48	Diesel
2050	Reaches 123	Cranes	1	0	160	0.29	Diesel
2050	Reaches 123	Cranes	1	0	240	0.29	Diesel
2050	Reaches 123	Cranes	1	1	275	0.29	Diesel
2050	Reaches 123	Cranes	1	2	66	0.29	Diesel
2050	Reaches 123	Crawler Tractors	1	0	70	0.43	Diesel
2050	Reaches 123	Crawler Tractors	1	2	145	0.43	Diesel
2050	Reaches 123	Crawler Tractors	1	0	410	0.43	Diesel
2050	Reaches 123	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2050	Reaches 123	Excavators	1	0	128	0.38	Diesel
2050	Reaches 123	Excavators	1	1	523	0.38	Diesel
2050	Reaches 123	Excavators	1	0	384	0.38	Diesel
2050	Reaches 123	Generator Sets	1	3	12	0.74	Diesel
2050	Reaches 123	Generator Sets	1	0	107	0.74	Diesel
2050	Reaches 123	Graders	1	1	158	0.41	Diesel
2050	Reaches 123	Graders	1	1	215	0.41	Diesel
2050	Reaches 123	Off-Highway Trucks	1	0	375	0.38	Diesel
2050	Reaches 123	Off-Highway Trucks	1	0	452	0.38	Diesel
2050	Reaches 123	Off-Highway Trucks	1	2	650	0.38	Diesel
2050	Reaches 123	Plate Compactors	1	0	8	0.43	Diesel
2050	Reaches 123	Pumps	1	0	16	0.74	Diesel
2050	Reaches 123	Pumps	1	0	60	0.74	Diesel
2050	Reaches 123	Rollers	1	0	240	0.38	Diesel
2050	Reaches 123	Rollers	1	1	315	0.38	Diesel
2050	Reaches 123	Rollers	1	1	150	0.38	Diesel
2050	Reaches 123	Rubber Tired Loaders	1	1	197	0.36	Diesel
2050	Reaches 123	Rubber Tired Loaders	1	0	501	0.36	Diesel
2050	Reaches 123	Scrapers	1	0	175	0.48	Diesel
2050	Reaches 123	Scrapers	1	1	450	0.48	Diesel
2050	Reaches 123	Scrapers	1	0	500	0.48	Diesel
2050	Reaches 123	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2050	Reaches 123	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
2050	Reaches 123	Welders	1	0	48	0.45	Diesel
2053	Reaches 123	Cranes	1	22	360	0.29	Diesel
2053	Reaches 123	Cranes	1	2	175	0.29	Diesel
2053	Reaches 123	Rubber Tired Loaders	1	22	200	0.36	Diesel
2060	Reaches 123	Crawler Tractors	1	13	70	0.43	Diesel
2060	Reaches 123	Crawler Tractors	4	19	145	0.43	Diesel
2060	Reaches 123	Crawler Tractors	1	12	410	0.43	Diesel
2060	Reaches 123	Excavators	1	20	523	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2060	Reaches 123	Excavators	1	4.747658 82	384	0.38	Diesel
2060	Reaches 123	Gas Pump	4	19	2	0.69	Gasoline
2060	Reaches 123	Generator Sets	5	20	12	0.74	Diesel
2060	Reaches 123	Graders	1	0	158	0.41	Diesel
2060	Reaches 123	Graders	2	13	215	0.41	Diesel
2060	Reaches 123	Off-Highway Trucks	1	8	452	0.38	Diesel
2060	Reaches 123	Off-Highway Trucks	5	20	650	0.38	Diesel
2060	Reaches 123	Pumps	1	4	16	0.74	Diesel
2060	Reaches 123	Rollers	1	20	315	0.38	Diesel
2060	Reaches 123	Rollers	1	1	150	0.38	Diesel
2060	Reaches 123	Rubber Tired Loaders	1	10	145	0.36	Diesel
2060	Reaches 123	Scrapers	2	19	450	0.48	Diesel
2060	Reaches 123	Scrapers	1	4	500	0.48	Diesel
2063	Reaches 123	Cranes	1	23	360	0.29	Diesel
2063	Reaches 123	Pumps	1	7	210	0.74	Diesel
2070	Reaches 123	Crawler Tractors	2	6	24	0.43	Diesel
2070	Reaches 123	Crawler Tractors	2	10	145	0.43	Diesel
2070	Reaches 123	Crawler Tractors	2	10	410	0.43	Diesel
2070	Reaches 123	Graders	1	10	215	0.41	Diesel
2070	Reaches 123	Rollers	2	10	240	0.38	Diesel
2070	Reaches 123	Scrapers	3	10	450	0.48	Diesel
2070	Reaches 123	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
2073	Reaches 123	Cranes	1	1	360	0.29	Diesel
2073	Reaches 123	Pumps	1	2	210	0.74	Diesel
2080	Reaches 123	Crawler Tractors	1	6	24	0.43	Diesel
2080	Reaches 123	Generator Sets	1	6	713	0.74	Diesel
2080	Reaches 123	Rubber Tired Loaders	1	19	211	0.36	Diesel
2080	Reaches 123	Welders	1	1	48	0.45	Diesel
2083	Reaches 123	Air Compressors	1	4	80	0.48	Diesel
2083	Reaches 123	Cement and Mortar Mixers	2	12	18	0.56	Diesel
2083	Reaches 123	Cranes	2	12	100	0.29	Diesel
2083	Reaches 123	Cranes	1	15	240	0.29	Diesel
2083	Reaches 123	Cranes	1	15	275	0.29	Diesel
2083	Reaches 123	Cranes	1	14	335	0.29	Diesel
2083	Reaches 123	Cranes	1	15	335	0.29	Diesel
2083	Reaches 123	Cranes	1	2	66	0.29	Diesel
2083	Reaches 123	Crawler Tractors	1	1	70	0.43	Diesel
2083	Reaches 123	Crawler Tractors	1	23	145	0.43	Diesel
2083	Reaches 123	Excavators	1	0	128	0.38	Diesel
2083	Reaches 123	Excavators	1	0	315	0.38	Diesel
2083	Reaches 123	Excavators	1	2	384	0.38	Diesel
2083	Reaches 123	Gas Pump	1	2	2	0.69	Gasoline

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2083	Reaches 123	Graders	1	0	158	0.41	Diesel
2083	Reaches 123	Graders	1	1	215	0.41	Diesel
2083	Reaches 123	Off-Highway Trucks	2	17	375	0.38	Diesel
2083	Reaches 123	Pumps	2	12	215	0.74	Diesel
2083	Reaches 123	Pumps	1	1	16	0.74	Diesel
2083	Reaches 123	Pumps	1	15	60	0.74	Diesel
2083	Reaches 123	Rollers	1	1	315	0.38	Diesel
2083	Reaches 123	Rollers	1	0	150	0.38	Diesel
2083	Reaches 123	Rubber Tired Loaders	1	15	160	0.36	Diesel
2083	Reaches 123	Rubber Tired Loaders	1	0	145	0.36	Diesel
2083	Reaches 123	Scrapers	1	0	175	0.48	Diesel
2083	Reaches 123	Scrapers	1	0	450	0.48	Diesel
2083	Reaches 123	Tractors/Loaders/Backhoes	2	20	101	0.37	Diesel
2093	Reaches 123	Cranes	1	15	360	0.29	Diesel
2093	Reaches 123	Cranes	1	2	175	0.29	Diesel
2093	Reaches 123	Rubber Tired Loaders	1	15	200	0.36	Diesel
2113	Reaches 123	Crawler Tractors	1	3	24	0.43	Diesel
2113	Reaches 123	Crawler Tractors	1	4	145	0.43	Diesel
2113	Reaches 123	Excavators	1	2	384	0.38	Diesel
2113	Reaches 123	Graders	1	1	215	0.41	Diesel
2113	Reaches 123	Pumps	1	0	16	0.74	Diesel
2113	Reaches 123	Rollers	1	2	315	0.38	Diesel
2113	Reaches 123	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2123	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2123	Reaches 123	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2123	Reaches 123	Cranes	2	19	100	0.29	Diesel
2123	Reaches 123	Cranes	1	1	66	0.29	Diesel
2123	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2123	Reaches 123	Excavators	1	1	128	0.38	Diesel
2123	Reaches 123	Graders	1	1	215	0.41	Diesel
2123	Reaches 123	Pumps	2	19	215	0.74	Diesel
2123	Reaches 123	Pumps	1	1	16	0.74	Diesel
2123	Reaches 123	Rollers	1	1	150	0.38	Diesel
2123	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2123	Reaches 123	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2133	Reaches 123	Air Compressors	1	5	80	0.48	Diesel
2133	Reaches 123	Cement and Mortar Mixers	2	22	18	0.56	Diesel
2133	Reaches 123	Cranes	2	22	100	0.29	Diesel
2133	Reaches 123	Cranes	1	16	240	0.29	Diesel
2133	Reaches 123	Cranes	1	16	275	0.29	Diesel
2133	Reaches 123	Cranes	1	17	335	0.29	Diesel
2133	Reaches 123	Cranes	1	16	335	0.29	Diesel
2133	Reaches 123	Cranes	1	3	66	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2133	Reaches 123	Crawler Tractors	1	1	70	0.43	Diesel
2133	Reaches 123	Crawler Tractors	1	20	145	0.43	Diesel
2133	Reaches 123	Crawler Tractors	1	0	410	0.43	Diesel
2133	Reaches 123	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2133	Reaches 123	Excavators	1	0	128	0.38	Diesel
2133	Reaches 123	Excavators	1	0	315	0.38	Diesel
2133	Reaches 123	Excavators	1	2	384	0.38	Diesel
2133	Reaches 123	Gas Pump	1	2	2	0.69	Gasoline
2133	Reaches 123	Generator Sets	1	2	12	0.74	Diesel
2133	Reaches 123	Graders	1	0	158	0.41	Diesel
2133	Reaches 123	Graders	1	1	215	0.41	Diesel
2133	Reaches 123	Off-Highway Trucks	3	22	375	0.38	Diesel
2133	Reaches 123	Pumps	2	22	215	0.74	Diesel
2133	Reaches 123	Pumps	1	0	16	0.74	Diesel
2133	Reaches 123	Pumps	1	16	60	0.74	Diesel
2133	Reaches 123	Rollers	1	0	240	0.38	Diesel
2133	Reaches 123	Rollers	1	1	315	0.38	Diesel
2133	Reaches 123	Rollers	1	0	150	0.38	Diesel
2133	Reaches 123	Rollers	1	0	18	0.38	Diesel
2133	Reaches 123	Rubber Tired Loaders	1	16	160	0.36	Diesel
2133	Reaches 123	Rubber Tired Loaders	1	0	145	0.36	Diesel
2133	Reaches 123	Scrapers	1	0	450	0.48	Diesel
2133	Reaches 123	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2133	Reaches 123	Tractors/Loaders/Backhoes	3	20	101	0.37	Diesel
2153	Reaches 123	Cranes	2	23	360	0.29	Diesel
2153	Reaches 123	Pumps	1	16	210	0.74	Diesel
2193	Reaches 123	Cranes	1	23	360	0.29	Diesel
2193	Reaches 123	Crawler Tractors	2	20	82	0.43	Diesel
2193	Reaches 123	Excavators	1	23	165	0.38	Diesel
2193	Reaches 123	Other construction equipment	2	20	6	0.42	Diesel
2193	Reaches 123	Rollers	1	23	240	0.38	Diesel
2203	Reaches 123	Crawler Tractors	1	3	24	0.43	Diesel
2203	Reaches 123	Crawler Tractors	1	3	145	0.43	Diesel
2203	Reaches 123	Excavators	1	1	384	0.38	Diesel
2203	Reaches 123	Graders	1	1	215	0.41	Diesel
2203	Reaches 123	Pumps	1	0	16	0.74	Diesel
2203	Reaches 123	Rollers	1	1	315	0.38	Diesel
2203	Reaches 123	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2213	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2213	Reaches 123	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2213	Reaches 123	Cranes	2	19	100	0.29	Diesel
2213	Reaches 123	Cranes	1	1	66	0.29	Diesel
2213	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2213	Reaches 123	Excavators	1	1	128	0.38	Diesel
2213	Reaches 123	Graders	1	1	215	0.41	Diesel
2213	Reaches 123	Pumps	2	19	215	0.74	Diesel
2213	Reaches 123	Pumps	1	1	16	0.74	Diesel
2213	Reaches 123	Rollers	1	1	150	0.38	Diesel
2213	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2213	Reaches 123	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2233	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2233	Reaches 123	Cement and Mortar Mixers	2	19	18	0.56	Diesel
2233	Reaches 123	Cranes	2	19	100	0.29	Diesel
2233	Reaches 123	Cranes	1	1	66	0.29	Diesel
2233	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2233	Reaches 123	Excavators	1	1	128	0.38	Diesel
2233	Reaches 123	Graders	1	1	215	0.41	Diesel
2233	Reaches 123	Pumps	2	19	215	0.74	Diesel
2233	Reaches 123	Pumps	1	1	16	0.74	Diesel
2233	Reaches 123	Rollers	1	1	150	0.38	Diesel
2233	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2233	Reaches 123	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2243	Reaches 123	Cranes	1	22	360	0.29	Diesel
2243	Reaches 123	Cranes	1	2	175	0.29	Diesel
2243	Reaches 123	Rubber Tired Loaders	1	22	200	0.36	Diesel
2253	Reaches 123	Cranes	4	23	360	0.29	Diesel
2253	Reaches 123	Cranes	1	3	175	0.29	Diesel
2253	Reaches 123	Pumps	1	16	210	0.74	Diesel
2253	Reaches 123	Rubber Tired Loaders	2	22	200	0.36	Diesel
2263	Reaches 123	Cranes	1	23	360	0.29	Diesel
2263	Reaches 123	Pumps	1	7	210	0.74	Diesel
2283	Reaches 123	Cranes	2	24	360	0.29	Diesel
2283	Reaches 123	Crawler Tractors	4	20	82	0.43	Diesel
2283	Reaches 123	Excavators	2	23	165	0.38	Diesel
2283	Reaches 123	Other construction equipment	4	20	6	0.42	Diesel
2283	Reaches 123	Pumps	1	2	210	0.74	Diesel
2283	Reaches 123	Rollers	2	23	240	0.38	Diesel
2303	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2303	Reaches 123	Cement and Mortar Mixers	1	24	18	0.56	Diesel
2303	Reaches 123	Cranes	1	24	100	0.29	Diesel
2303	Reaches 123	Cranes	1	1	66	0.29	Diesel
2303	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2303	Reaches 123	Excavators	1	1	128	0.38	Diesel
2303	Reaches 123	Graders	1	1	215	0.41	Diesel
2303	Reaches 123	Pumps	1	24	215	0.74	Diesel
2303	Reaches 123	Pumps	1	1	16	0.74	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2303	Reaches 123	Rollers	1	1	150	0.38	Diesel
2303	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2303	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
2313	Reaches 123	Cranes	1	23	360	0.29	Diesel
2313	Reaches 123	Crawler Tractors	2	20	82	0.43	Diesel
2313	Reaches 123	Excavators	1	23	165	0.38	Diesel
2313	Reaches 123	Other construction equipment	2	20	6	0.42	Diesel
2313	Reaches 123	Rollers	1	23	240	0.38	Diesel
2323	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2323	Reaches 123	Cement and Mortar Mixers	1	24	18	0.56	Diesel
2323	Reaches 123	Cranes	1	24	100	0.29	Diesel
2323	Reaches 123	Cranes	1	1	66	0.29	Diesel
2323	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2323	Reaches 123	Excavators	1	1	128	0.38	Diesel
2323	Reaches 123	Graders	1	1	215	0.41	Diesel
2323	Reaches 123	Pumps	1	24	215	0.74	Diesel
2323	Reaches 123	Pumps	1	1	16	0.74	Diesel
2323	Reaches 123	Rollers	1	1	150	0.38	Diesel
2323	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2323	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
2343	Reaches 123	Air Compressors	1	2	80	0.48	Diesel
2343	Reaches 123	Cement and Mortar Mixers	1	24	18	0.56	Diesel
2343	Reaches 123	Cranes	1	24	100	0.29	Diesel
2343	Reaches 123	Cranes	1	1	66	0.29	Diesel
2343	Reaches 123	Crawler Tractors	1	1	145	0.43	Diesel
2343	Reaches 123	Excavators	1	1	128	0.38	Diesel
2343	Reaches 123	Graders	1	1	215	0.41	Diesel
2343	Reaches 123	Pumps	1	24	215	0.74	Diesel
2343	Reaches 123	Pumps	1	1	16	0.74	Diesel
2343	Reaches 123	Rollers	1	1	150	0.38	Diesel
2343	Reaches 123	Scrapers	1	1	175	0.48	Diesel
2343	Reaches 123	Tractors/Loaders/Backhoes	1	24	101	0.37	Diesel
2363	Reaches 123	Cranes	2	14	360	0.29	Diesel
2363	Reaches 123	Cranes	1	1	175	0.29	Diesel
2363	Reaches 123	Pumps	1	5	210	0.74	Diesel
2363	Reaches 123	Rubber Tired Loaders	1	13	200	0.36	Diesel
2373	Reaches 123	Cranes	1	24	360	0.29	Diesel
2373	Reaches 123	Crawler Tractors	1	17	82	0.43	Diesel
2373	Reaches 123	Excavators	1	8	165	0.38	Diesel
2373	Reaches 123	Other construction equipment	1	17	6	0.42	Diesel
2373	Reaches 123	Pumps	1	4	210	0.74	Diesel
2373	Reaches 123	Rollers	1	8	240	0.38	Diesel
2393	Reaches 123	Cranes	2	16	360	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2393	Reaches 123	Crawler Tractors	1	13	82	0.43	Diesel
2393	Reaches 123	Excavators	1	6	165	0.38	Diesel
2393	Reaches 123	Other construction equipment	1	13	6	0.42	Diesel
2393	Reaches 123	Pumps	1	5	210	0.74	Diesel
2393	Reaches 123	Rollers	1	6	240	0.38	Diesel
2403	Reaches 123	Air Compressors	1	3	80	0.48	Diesel
2403	Reaches 123	Cement and Mortar Mixers	1	18	18	0.56	Diesel
2403	Reaches 123	Cranes	1	18	100	0.29	Diesel
2403	Reaches 123	Cranes	1	12	240	0.29	Diesel
2403	Reaches 123	Cranes	1	12	275	0.29	Diesel
2403	Reaches 123	Cranes	1	13	335	0.29	Diesel
2403	Reaches 123	Cranes	1	12	335	0.29	Diesel
2403	Reaches 123	Cranes	1	2	66	0.29	Diesel
2403	Reaches 123	Crawler Tractors	1	0	70	0.43	Diesel
2403	Reaches 123	Crawler Tractors	1	15	145	0.43	Diesel
2403	Reaches 123	Crawler Tractors	1	0	410	0.43	Diesel
2403	Reaches 123	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
2403	Reaches 123	Excavators	1	0	128	0.38	Diesel
2403	Reaches 123	Excavators	1	0	315	0.38	Diesel
2403	Reaches 123	Excavators	1	2	384	0.38	Diesel
2403	Reaches 123	Gas Pump	1	1	2	0.69	Gasoline
2403	Reaches 123	Generator Sets	1	1	12	0.74	Diesel
2403	Reaches 123	Graders	1	0	158	0.41	Diesel
2403	Reaches 123	Graders	1	1	215	0.41	Diesel
2403	Reaches 123	Off-Highway Trucks	3	16	375	0.38	Diesel
2403	Reaches 123	Pumps	1	18	215	0.74	Diesel
2403	Reaches 123	Pumps	1	0	16	0.74	Diesel
2403	Reaches 123	Pumps	1	12	60	0.74	Diesel
2403	Reaches 123	Rollers	1	0	240	0.38	Diesel
2403	Reaches 123	Rollers	1	1	315	0.38	Diesel
2403	Reaches 123	Rollers	1	0	150	0.38	Diesel
2403	Reaches 123	Rollers	1	0	18	0.38	Diesel
2403	Reaches 123	Rubber Tired Loaders	1	12	160	0.36	Diesel
2403	Reaches 123	Rubber Tired Loaders	1	0	145	0.36	Diesel
2403	Reaches 123	Scrapers	1	0	450	0.48	Diesel
2403	Reaches 123	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
2403	Reaches 123	Tractors/Loaders/Backhoes	2	15	101	0.37	Diesel
2413	Reaches 123	Air Compressors	1	4	80	0.48	Diesel
2413	Reaches 123	Cement and Mortar Mixers	2	17	18	0.56	Diesel
2413	Reaches 123	Cranes	2	17	100	0.29	Diesel
2413	Reaches 123	Cranes	1	19	240	0.29	Diesel
2413	Reaches 123	Cranes	1	19	275	0.29	Diesel
2413	Reaches 123	Cranes	1	21	335	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2413	Reaches 123	Cranes	1	19	335	0.29	Diesel
2413	Reaches 123	Cranes	1	2	66	0.29	Diesel
2413	Reaches 123	Crawler Tractors	1	1	70	0.43	Diesel
2413	Reaches 123	Crawler Tractors	2	16	145	0.43	Diesel
2413	Reaches 123	Excavators	1	0	128	0.38	Diesel
2413	Reaches 123	Excavators	1	0	315	0.38	Diesel
2413	Reaches 123	Excavators	1	4	384	0.38	Diesel
2413	Reaches 123	Gas Pump	1	3	2	0.69	Gasoline
2413	Reaches 123	Graders	1	0	158	0.41	Diesel
2413	Reaches 123	Graders	1	2	215	0.41	Diesel
2413	Reaches 123	Off-Highway Trucks	2	22	375	0.38	Diesel
2413	Reaches 123	Pumps	2	17	215	0.74	Diesel
2413	Reaches 123	Pumps	1	1	16	0.74	Diesel
2413	Reaches 123	Pumps	1	19	60	0.74	Diesel
2413	Reaches 123	Rollers	1	2	315	0.38	Diesel
2413	Reaches 123	Rollers	1	1	150	0.38	Diesel
2413	Reaches 123	Rubber Tired Loaders	1	19	160	0.36	Diesel
2413	Reaches 123	Rubber Tired Loaders	1	0	145	0.36	Diesel
2413	Reaches 123	Scrapers	1	0	175	0.48	Diesel
2413	Reaches 123	Scrapers	1	0	450	0.48	Diesel
2413	Reaches 123	Tractors/Loaders/Backhoes	3	18	101	0.37	Diesel
2453	Reaches 123	Air Compressors	1	3	80	0.48	Diesel
2453	Reaches 123	Cement and Mortar Mixers	1	10	18	0.56	Diesel
2453	Reaches 123	Cranes	1	10	100	0.29	Diesel
2453	Reaches 123	Cranes	1	13	240	0.29	Diesel
2453	Reaches 123	Cranes	1	13	275	0.29	Diesel
2453	Reaches 123	Cranes	1	12	335	0.29	Diesel
2453	Reaches 123	Cranes	1	13	335	0.29	Diesel
2453	Reaches 123	Cranes	1	1	66	0.29	Diesel
2453	Reaches 123	Crawler Tractors	1	0	70	0.43	Diesel
2453	Reaches 123	Crawler Tractors	1	13	145	0.43	Diesel
2453	Reaches 123	Excavators	1	0	315	0.38	Diesel
2453	Reaches 123	Excavators	1	0	384	0.38	Diesel
2453	Reaches 123	Generator Sets	1	1	12	0.74	Diesel
2453	Reaches 123	Graders	1	0	158	0.41	Diesel
2453	Reaches 123	Graders	1	1	215	0.41	Diesel
2453	Reaches 123	Off-Highway Trucks	2	13	375	0.38	Diesel
2453	Reaches 123	Pumps	1	10	215	0.74	Diesel
2453	Reaches 123	Pumps	1	13	60	0.74	Diesel
2453	Reaches 123	Rollers	1	0	240	0.38	Diesel
2453	Reaches 123	Rollers	1	0	150	0.38	Diesel
2453	Reaches 123	Rubber Tired Loaders	1	13	160	0.36	Diesel
2453	Reaches 123	Tractors/Loaders/Backhoes	1	23	101	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2463	Reaches 123	Air Compressors	1	3	80	0.48	Diesel
2463	Reaches 123	Cement and Mortar Mixers	1	10	18	0.56	Diesel
2463	Reaches 123	Cranes	1	10	100	0.29	Diesel
2463	Reaches 123	Cranes	1	13	240	0.29	Diesel
2463	Reaches 123	Cranes	1	13	275	0.29	Diesel
2463	Reaches 123	Cranes	1	12	335	0.29	Diesel
2463	Reaches 123	Cranes	1	13	335	0.29	Diesel
2463	Reaches 123	Cranes	1	1	66	0.29	Diesel
2463	Reaches 123	Crawler Tractors	1	0	70	0.43	Diesel
2463	Reaches 123	Crawler Tractors	1	13	145	0.43	Diesel
2463	Reaches 123	Excavators	1	0	315	0.38	Diesel
2463	Reaches 123	Excavators	1	0	384	0.38	Diesel
2463	Reaches 123	Generator Sets	1	1	12	0.74	Diesel
2463	Reaches 123	Graders	1	0	158	0.41	Diesel
2463	Reaches 123	Graders	1	1	215	0.41	Diesel
2463	Reaches 123	Off-Highway Trucks	2	13	375	0.38	Diesel
2463	Reaches 123	Pumps	1	10	215	0.74	Diesel
2463	Reaches 123	Pumps	1	13	60	0.74	Diesel
2463	Reaches 123	Rollers	1	0	240	0.38	Diesel
2463	Reaches 123	Rollers	1	0	150	0.38	Diesel
2463	Reaches 123	Rubber Tired Loaders	1	13	160	0.36	Diesel
2463	Reaches 123	Tractors/Loaders/Backhoes	1	23	101	0.37	Diesel
2473	Reaches 123	Cranes	1	22	360	0.29	Diesel
2473	Reaches 123	Cranes	1	1	175	0.29	Diesel
2473	Reaches 123	Pumps	1	4	210	0.74	Diesel
2473	Reaches 123	Rubber Tired Loaders	1	9	200	0.36	Diesel
1114	Temporary Power	Cranes	1	8	285	0.29	Diesel
1114	Temporary Power	Cranes	2	8	285	0.29	Diesel
1114	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1114	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1114	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1115	Temporary Power	Cranes	1	8	285	0.29	Diesel
1115	Temporary Power	Cranes	2	8	285	0.29	Diesel
1115	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1115	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1115	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1116	Temporary Power	Cranes	1	8	285	0.29	Diesel
1116	Temporary Power	Cranes	2	8	285	0.29	Diesel
1116	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1116	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1116	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1117	Temporary Power	Cranes	1	8	285	0.29	Diesel
1117	Temporary Power	Cranes	2	8	285	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1117	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1117	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1117	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1111	Temporary Power	Cranes	1	8	285	0.29	Diesel
1111	Temporary Power	Cranes	2	8	285	0.29	Diesel
1111	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1111	Temporary Power	Other Construction Equipment	3	8	172	0.42	Diesel
1111	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1111	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1112	Temporary Power	Cranes	1	8	285	0.29	Diesel
1112	Temporary Power	Cranes	2	8	285	0.29	Diesel
1112	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1112	Temporary Power	Other Construction Equipment	3	8	172	0.42	Diesel
1112	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1112	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1113	Temporary Power	Cranes	1	8	285	0.29	Diesel
1113	Temporary Power	Cranes	2	8	285	0.29	Diesel
1113	Temporary Power	Crawler Tractors	1	8	335	0.43	Diesel
1113	Temporary Power	Other Construction Equipment	3	8	172	0.42	Diesel
1113	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
1113	Temporary Power	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
51050	Bridges ^b	Air Compressors	4	10	80	0.48	Diesel
51050	Bridges ^b	Cranes	1	5	160	0.29	Diesel
51050	Bridges ^b	Cranes	3	7	275	0.29	Diesel
51050	Bridges ^b	Cranes	3	7	66	0.29	Diesel
51050	Bridges ^b	Crawler Tractors	1	2	145	0.43	Diesel
51050	Bridges ^b	Graders	1	2	215	0.41	Diesel
51050	Bridges ^b	Plate Compactors	1	3	8	0.43	Diesel
51050	Bridges ^b	Pumps	1	2	16	0.74	Diesel
51050	Bridges ^b	Rollers	1	2	150	0.38	Diesel
51050	Bridges ^b	Rubber Tired Loaders	1	6	197	0.36	Diesel
51050	Bridges ^b	Scrapers	1	3	175	0.48	Diesel
51050	Bridges ^b	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
51060	Bridges ^b	Crawler Tractors	2	8	24	0.43	Diesel
51060	Bridges ^b	Generator Sets	2	8	713	0.74	Diesel
51060	Bridges ^b	Rubber Tired Loaders	4	8	211	0.36	Diesel
51060	Bridges ^b	Welders	1	3	48	0.45	Diesel
51070	Bridges ^b	Graders	1	0	158	0.41	Diesel
51070	Bridges ^b	Rollers	1	0	150	0.38	Diesel
51070	Bridges ^b	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
51110	Bridges ^b	Air Compressors	1	1	80	0.48	Diesel
51110	Bridges ^b	Cranes	3	10	160	0.29	Diesel
51110	Bridges ^b	Cranes	6	10	240	0.29	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
51110	Bridges ^b	Cranes	6	10	335	0.29	Diesel
51110	Bridges ^b	Crawler Tractors	6	10	242	0.43	Diesel
51110	Bridges ^b	Excavators	1	4	315	0.38	Diesel
51110	Bridges ^b	Off-Highway Trucks	1	8	375	0.38	Diesel
51110	Bridges ^b	Other Construction Equipment	6	10	92	0.42	Diesel
51110	Bridges ^b	Plate Compactors	1	4	8	0.43	Diesel
51110	Bridges ^b	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
51120	Bridges ^b	Pumps	3	8	210	0.74	Diesel
51130	Bridges ^b	Pumps	5	10	210	0.74	Diesel
51131	Bridges ^b	Crawler Tractors	10	10	310	0.43	Diesel
51131	Bridges ^b	Excavators	10	10	384	0.38	Diesel
51131	Bridges ^b	Graders	10	10	215	0.41	Diesel
51131	Bridges ^b	Off-Highway Trucks	49	10	452	0.38	Diesel
51131	Bridges ^b	Pavers	1	6	224	0.42	Diesel
51131	Bridges ^b	Rollers	1	6	110	0.38	Diesel
51131	Bridges ^b	Rollers	1	6	131	0.38	Diesel
51131	Bridges ^b	Rollers	10	10	315	0.38	Diesel
51131	Bridges ^b	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
20030	Canals ^b	Air Compressors	3	7	80	0.48	Diesel
20030	Canals ^b	Cranes	1	2	160	0.29	Diesel
20030	Canals ^b	Cranes	1	2	240	0.29	Diesel
20030	Canals ^b	Cranes	1	2	275	0.29	Diesel
20030	Canals ^b	Cranes	2	6	66	0.29	Diesel
20030	Canals ^b	Crawler Tractors	1	0	70	0.43	Diesel
20030	Canals ^b	Crawler Tractors	1	1	145	0.43	Diesel
20030	Canals ^b	Generator Sets	1	1	107	0.74	Diesel
20030	Canals ^b	Graders	1	1	215	0.41	Diesel
20030	Canals ^b	Off-Highway Trucks	1	1	375	0.38	Diesel
20030	Canals ^b	Plate Compactors	1	3	8	0.43	Diesel
20030	Canals ^b	Pumps	1	1	16	0.74	Diesel
20030	Canals ^b	Rollers	1	1	150	0.38	Diesel
20030	Canals ^b	Rubber Tired Loaders	1	6	197	0.36	Diesel
20030	Canals ^b	Scrapers	1	1	175	0.48	Diesel
20030	Canals ^b	Tractors/Loaders/Backhoes	1	5	101	0.37	Diesel
20030	Canals ^b	Welders	1	1	48	0.45	Diesel
20035	Canals ^b	Graders	1	1	158	0.41	Diesel
20035	Canals ^b	Rollers	1	1	150	0.38	Diesel
20035	Canals ^b	Tractors/Loaders/Backhoes	1	4	87	0.37	Diesel
20040	Canals ^b	Crawler Tractors	1	4	24	0.43	Diesel
20040	Canals ^b	Generator Sets	1	4	713	0.74	Diesel
20040	Canals ^b	Rubber Tired Loaders	1	8	211	0.36	Diesel
20040	Canals ^b	Welders	1	1	48	0.45	Diesel
20050	Canals ^b	Air Compressors	1	1	115	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
20050	Canals ^b	Cranes	2	8	240	0.29	Diesel
20050	Canals ^b	Cranes	2	8	335	0.29	Diesel
20050	Canals ^b	Crawler Tractors	1	3	145	0.43	Diesel
20050	Canals ^b	Crawler Tractors	1	3	310	0.43	Diesel
20050	Canals ^b	Crawler Tractors	1	7	410	0.43	Diesel
20050	Canals ^b	Graders	10	9	215	0.41	Diesel
20050	Canals ^b	Off-Highway Trucks	2	5	452	0.38	Diesel
20050	Canals ^b	Plate Compactors	1	1	8	0.43	Diesel
20050	Canals ^b	Pumps	1	2	16	0.74	Diesel
20050	Canals ^b	Rollers	1	7	315	0.38	Diesel
20050	Canals ^b	Rollers	2	6	150	0.38	Diesel
20050	Canals ^b	Rubber Tired Loaders	2	6	211	0.36	Diesel
20050	Canals ^b	Rubber Tired Loaders	1	3	501	0.36	Diesel
20050	Canals ^b	Scrapers	4	9	450	0.48	Diesel
20050	Canals ^b	Tractors/Loaders/Backhoes	3	9	87	0.37	Diesel
20110	Canals ^b	Crawler Tractors	2	7	145	0.43	Diesel
20110	Canals ^b	Crushing/Proc. Equipment	1	6	85	0.78	Diesel
20110	Canals ^b	Excavators	1	7	128	0.38	Diesel
20120	Canals ^b	Crawler Tractors	3	18	580	0.43	Diesel
20120	Canals ^b	Crawler Tractors	2	12	145	0.43	Diesel
20120	Canals ^b	Crawler Tractors	4	17	310	0.43	Diesel
20120	Canals ^b	Excavators	1	2	315	0.38	Diesel
20120	Canals ^b	Excavators	2	11	384	0.38	Diesel
20120	Canals ^b	Excavators	2	15	908	0.38	Diesel
20120	Canals ^b	Generator Sets	25	20	12	0.74	Diesel
20120	Canals ^b	Graders	3	15	215	0.41	Diesel
20120	Canals ^b	Off-Highway Trucks	1	4	375	0.38	Diesel
20120	Canals ^b	Off-Highway Trucks	3	15	489	0.38	Diesel
20120	Canals ^b	Off-Highway Trucks	8	19	1000	0.38	Diesel
20120	Canals ^b	Rollers	5	17	315	0.38	Diesel
20120	Canals ^b	Scrapers	6	18	550	0.48	Diesel
20120	Canals ^b	Scrapers	1	14	500	0.48	Diesel
20130	Canals ^b	Crawler Tractors	4	18	145	0.43	Diesel
20130	Canals ^b	Crawler Tractors	7	20	310	0.43	Diesel
20130	Canals ^b	Excavators	1	2	315	0.38	Diesel
20130	Canals ^b	Excavators	3	17	384	0.38	Diesel
20130	Canals ^b	Excavators	3	18	908	0.38	Diesel
20130	Canals ^b	Generator Sets	14	20	12	0.74	Diesel
20130	Canals ^b	Graders	3	17	215	0.41	Diesel
20130	Canals ^b	Off-Highway Trucks	1	4	375	0.38	Diesel
20130	Canals ^b	Off-Highway Trucks	8	20	489	0.38	Diesel
20130	Canals ^b	Off-Highway Trucks	10	20	1000	0.38	Diesel
20130	Canals ^b	Rollers	3	18	315	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
20130	Canals ^b	Rollers	1	1	150	0.38	Diesel
20130	Canals ^b	Rubber Tired Loaders	1	14	501	0.36	Diesel
20130	Canals ^b	Scrapers	1	3	450	0.48	Diesel
20150	Canals ^b	Crawler Tractors	8	19	145	0.43	Diesel
20150	Canals ^b	Crawler Tractors	6	18	310	0.43	Diesel
20150	Canals ^b	Crushing/Proc. Equipment	1	9	85	0.78	Diesel
20150	Canals ^b	Excavators	1	9	128	0.38	Diesel
20150	Canals ^b	Excavators	1	2	315	0.38	Diesel
20150	Canals ^b	Excavators	3	16	384	0.38	Diesel
20150	Canals ^b	Excavators	3	16	908	0.38	Diesel
20150	Canals ^b	Generator Sets	17	20	12	0.74	Diesel
20150	Canals ^b	Graders	7	18	215	0.41	Diesel
20150	Canals ^b	Off-Highway Trucks	1	4	375	0.38	Diesel
20150	Canals ^b	Off-Highway Trucks	7	19	489	0.38	Diesel
20150	Canals ^b	Off-Highway Trucks	11	20	1000	0.38	Diesel
20150	Canals ^b	Rollers	3	16	315	0.38	Diesel
20150	Canals ^b	Rollers	2	20	150	0.38	Diesel
20150	Canals ^b	Scrapers	2	20	175	0.48	Diesel
20150	Canals ^b	Scrapers	4	18	550	0.48	Diesel
20170	Canals ^b	Crawler Tractors	2	17	145	0.43	Diesel
20170	Canals ^b	Excavators	2	17	523	0.38	Diesel
20170	Canals ^b	Excavators	2	17	384	0.38	Diesel
20170	Canals ^b	Pumps	2	17	60	0.74	Diesel
20170	Canals ^b	Tractors/Loaders/Backhoes	4	17	101	0.37	Diesel
20210	Canals ^b	Crawler Tractors	4	9	145	0.43	Diesel
20210	Canals ^b	Excavators	3	8	384	0.38	Diesel
20210	Canals ^b	Graders	3	9	215	0.41	Diesel
20210	Canals ^b	Off-Highway Trucks	4	9	489	0.38	Diesel
20210	Canals ^b	Pavers	1	5	224	0.42	Diesel
20210	Canals ^b	Pumps	1	3	16	0.74	Diesel
20210	Canals ^b	Rollers	1	5	110	0.38	Diesel
20210	Canals ^b	Rollers	1	5	131	0.38	Diesel
20210	Canals ^b	Rollers	2	9	315	0.38	Diesel
20210	Canals ^b	Rollers	2	8	150	0.38	Diesel
20210	Canals ^b	Rubber Tired Loaders	2	8	211	0.36	Diesel
20210	Canals ^b	Tractors/Loaders/Backhoes	1	5	87	0.37	Diesel
20220	Canals ^b	Crawler Tractors	1	8	145	0.43	Diesel
20220	Canals ^b	Excavators	6	9	163	0.38	Diesel
20220	Canals ^b	Excavators	1	8	384	0.38	Diesel
20220	Canals ^b	Off-Highway Trucks	7	10	489	0.38	Diesel
20220	Canals ^b	Pavers	1	8	90	0.42	Diesel
20220	Canals ^b	Tractors/Loaders/Backhoes	1	8	87	0.37	Diesel
20230	Canals ^b	Tractors/Loaders/Backhoes	2	6	87	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
20230	Canals ^b	Tractors/Loaders/Backhoes	2	6	80	0.37	Diesel
20300	Canals ^b	Other Construction Equipment	2	6	18	0.42	Diesel
20300	Canals ^b	Pumps	2	6	16	0.74	Diesel
20300	Canals ^b	Tractors/Loaders/Backhoes	4	9	87	0.37	Diesel
20300	Canals ^b	Tractors/Loaders/Backhoes	3	8	80	0.37	Diesel
89040	Siphons ^b	Cranes	1	10	240	0.29	Diesel
89040	Siphons ^b	Cranes	1	10	335	0.29	Diesel
89040	Siphons ^b	Crawler Tractors	1	10	70	0.43	Diesel
89040	Siphons ^b	Crawler Tractors	1	10	145	0.43	Diesel
89040	Siphons ^b	Crawler Tractors	1	10	410	0.43	Diesel
89040	Siphons ^b	Excavators	1	10	315	0.38	Diesel
89040	Siphons ^b	Generator Sets	3	3	12	0.74	Diesel
89040	Siphons ^b	Graders	1	10	158	0.41	Diesel
89040	Siphons ^b	Graders	1	10	215	0.41	Diesel
89040	Siphons ^b	Off-Highway Trucks	1	10	452	0.38	Diesel
89040	Siphons ^b	Pumps	1	10	16	0.74	Diesel
89040	Siphons ^b	Rollers	1	10	240	0.38	Diesel
89040	Siphons ^b	Rollers	1	10	150	0.38	Diesel
89040	Siphons ^b	Rollers	1	10	18	0.38	Diesel
89040	Siphons ^b	Rubber Tired Loaders	1	10	211	0.36	Diesel
89040	Siphons ^b	Scrapers	2	5	450	0.48	Diesel
89040	Siphons ^b	Scrapers	1	10	500	0.48	Diesel
89040	Siphons ^b	Tractors/Loaders/Backhoes	1	10	87	0.37	Diesel
89050	Siphons ^b	Air Compressors	2	5	80	0.48	Diesel
89050	Siphons ^b	Cranes	1	10	160	0.29	Diesel
89050	Siphons ^b	Cranes	1	10	240	0.29	Diesel
89050	Siphons ^b	Cranes	1	10	275	0.29	Diesel
89050	Siphons ^b	Cranes	2	5	66	0.29	Diesel
89050	Siphons ^b	Crawler Tractors	1	10	70	0.43	Diesel
89050	Siphons ^b	Crawler Tractors	1	10	145	0.43	Diesel
89050	Siphons ^b	Generator Sets	1	10	107	0.74	Diesel
89050	Siphons ^b	Graders	1	10	215	0.41	Diesel
89050	Siphons ^b	Off-Highway Trucks	1	10	375	0.38	Diesel
89050	Siphons ^b	Plate Compactors	1	10	8	0.43	Diesel
89050	Siphons ^b	Pumps	1	10	16	0.74	Diesel
89050	Siphons ^b	Rollers	1	10	150	0.38	Diesel
89050	Siphons ^b	Rubber Tired Loaders	1	10	197	0.36	Diesel
89050	Siphons ^b	Scrapers	1	10	175	0.48	Diesel
89050	Siphons ^b	Tractors/Loaders/Backhoes	1	10	101	0.37	Diesel
89050	Siphons ^b	Welders	1	10	48	0.45	Diesel
89060	Siphons ^b	Crawler Tractors	2	5	24	0.43	Diesel
89060	Siphons ^b	Generator Sets	2	5	713	0.74	Diesel
89060	Siphons ^b	Rubber Tired Loaders	3	3	211	0.36	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
89060	Siphons ^b	Welders	1	10	48	0.45	Diesel
89070	Siphons ^b	Graders	1	8	158	0.41	Diesel
89070	Siphons ^b	Rollers	1	8	150	0.38	Diesel
89070	Siphons ^b	Tractors/Loaders/Backhoes	1	8	87	0.37	Diesel
89111	Siphons ^b	Bore/Drill Rigs	4	5	206	0.50	Diesel
89111	Siphons ^b	Cranes	3	7	240	0.29	Diesel
89111	Siphons ^b	Cranes	6	3	335	0.29	Diesel
89111	Siphons ^b	Crawler Tractors	6	3	242	0.43	Diesel
89111	Siphons ^b	Off-Highway Trucks	3	7	489	0.38	Diesel
89111	Siphons ^b	Other construction equipment	3	7	325	0.42	Diesel
89111	Siphons ^b	Welders	4	5	48	0.45	Diesel
89112	Siphons ^b	Cranes	2	10	240	0.29	Diesel
89112	Siphons ^b	Cranes	2	10	335	0.29	Diesel
89112	Siphons ^b	Crawler Tractors	2	10	242	0.43	Diesel
89112	Siphons ^b	Crawler Tractors	1	20	310	0.43	Diesel
89112	Siphons ^b	Excavators	1	20	908	0.38	Diesel
89112	Siphons ^b	Graders	1	20	215	0.41	Diesel
89112	Siphons ^b	Graders	1	20	350	0.41	Diesel
89112	Siphons ^b	Off-Highway Trucks	1	20	489	0.38	Diesel
89112	Siphons ^b	Off-Highway Trucks	3	7	650	0.38	Diesel
89112	Siphons ^b	Other Construction Equipment	2	10	92	0.42	Diesel
89112	Siphons ^b	Pumps	1	20	60	0.74	Diesel
89112	Siphons ^b	Rollers	1	20	150	0.38	Diesel
89112	Siphons ^b	Rubber Tired Loaders	1	20	800	0.36	Diesel
89112	Siphons ^b	Scrapers	1	20	500	0.48	Diesel
89120	Siphons ^b	Air Compressors	4	3	500	0.48	Diesel
89120	Siphons ^b	Air Compressors	1	10	115	0.48	Diesel
89120	Siphons ^b	Cranes	4	3	365	0.29	Diesel
89120	Siphons ^b	Generator Sets	4	3	143	0.74	Diesel
89120	Siphons ^b	Other construction equipment	1	10	36	0.42	Diesel
89120	Siphons ^b	Pumps	2	5	210	0.74	Diesel
89120	Siphons ^b	Welders	7	1	48	0.45	Diesel
89130	Siphons ^b	Air Compressors	1	10	80	0.48	Diesel
89130	Siphons ^b	Cranes	1	10	160	0.29	Diesel
89130	Siphons ^b	Cranes	1	10	240	0.29	Diesel
89130	Siphons ^b	Cranes	1	10	275	0.29	Diesel
89130	Siphons ^b	Cranes	1	10	66	0.29	Diesel
89130	Siphons ^b	Crawler Tractors	1	10	70	0.43	Diesel
89130	Siphons ^b	Crawler Tractors	1	10	410	0.43	Diesel
89130	Siphons ^b	Generator Sets	1	10	107	0.74	Diesel
89130	Siphons ^b	Graders	1	10	215	0.41	Diesel
89130	Siphons ^b	Off-Highway Trucks	1	10	375	0.38	Diesel
89130	Siphons ^b	Off-Highway Trucks	1	10	489	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
89130	Siphons ^b	Pumps	1	10	60	0.74	Diesel
89130	Siphons ^b	Rollers	1	10	315	0.38	Diesel
89130	Siphons ^b	Rollers	1	10	150	0.38	Diesel
89130	Siphons ^b	Rubber Tired Loaders	1	10	197	0.36	Diesel
89130	Siphons ^b	Rubber Tired Loaders	1	10	501	0.36	Diesel
89130	Siphons ^b	Scrapers	1	10	500	0.48	Diesel
89130	Siphons ^b	Welders	1	10	48	0.45	Diesel
89141	Siphons ^b	Bore/Drill Rigs	4	5	206	0.50	Diesel
89141	Siphons ^b	Cranes	3	7	240	0.29	Diesel
89141	Siphons ^b	Cranes	6	3	335	0.29	Diesel
89141	Siphons ^b	Crawler Tractors	6	3	242	0.43	Diesel
89141	Siphons ^b	Off-Highway Trucks	2	10	489	0.38	Diesel
89141	Siphons ^b	Other construction equipment	3	7	325	0.42	Diesel
89141	Siphons ^b	Welders	4	5	48	0.45	Diesel
89142	Siphons ^b	Cranes	2	10	240	0.29	Diesel
89142	Siphons ^b	Cranes	2	10	335	0.29	Diesel
89142	Siphons ^b	Crawler Tractors	2	10	242	0.43	Diesel
89142	Siphons ^b	Crawler Tractors	1	20	310	0.43	Diesel
89142	Siphons ^b	Excavators	1	20	908	0.38	Diesel
89142	Siphons ^b	Graders	1	20	215	0.41	Diesel
89142	Siphons ^b	Graders	1	20	350	0.41	Diesel
89142	Siphons ^b	Off-Highway Trucks	1	20	489	0.38	Diesel
89142	Siphons ^b	Off-Highway Trucks	3	7	650	0.38	Diesel
89142	Siphons ^b	Other Construction Equipment	2	10	92	0.42	Diesel
89142	Siphons ^b	Pumps	1	20	60	0.74	Diesel
89142	Siphons ^b	Rollers	1	20	150	0.38	Diesel
89142	Siphons ^b	Rubber Tired Loaders	1	20	800	0.36	Diesel
89142	Siphons ^b	Scrapers	1	20	500	0.48	Diesel
89150	Siphons ^b	Air Compressors	3	3	500	0.48	Diesel
89150	Siphons ^b	Air Compressors	1	10	115	0.48	Diesel
89150	Siphons ^b	Cranes	3	3	365	0.29	Diesel
89150	Siphons ^b	Generator Sets	3	3	143	0.74	Diesel
89150	Siphons ^b	Other construction equipment	1	10	36	0.42	Diesel
89150	Siphons ^b	Pumps	1	10	210	0.74	Diesel
89150	Siphons ^b	Welders	6	2	48	0.45	Diesel
89160	Siphons ^b	Cranes	1	10	275	0.29	Diesel
89160	Siphons ^b	Crawler Tractors	1	10	410	0.43	Diesel
89160	Siphons ^b	Graders	1	10	215	0.41	Diesel
89160	Siphons ^b	Off-Highway Trucks	1	10	489	0.38	Diesel
89160	Siphons ^b	Pumps	1	10	60	0.74	Diesel
89160	Siphons ^b	Rollers	1	10	315	0.38	Diesel
89160	Siphons ^b	Rubber Tired Loaders	1	10	501	0.36	Diesel
89160	Siphons ^b	Scrapers	1	10	500	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
9005	Dredge ^b	Welders	1	0	48	0.45	Diesel
9005	Dredge ^b	Air Compressors	3	8	80	0.48	Diesel
9009	Dredge ^b	Crawler Tractors	2	6	24	0.43	Diesel
9004	Dredge ^b	Graders	1	0	158	0.41	Diesel
9006	Dredge ^b	Graders	1	0	158	0.41	Diesel
9007	Dredge ^b	Graders	1	0	158	0.41	Diesel
9004	Dredge ^b	Graders	1	1	215	0.41	Diesel
9005	Dredge ^b	Graders	1	2	215	0.41	Diesel
9007	Dredge ^b	Graders	3	7	215	0.41	Diesel
9009	Dredge ^b	Graders	1	10	215	0.41	Diesel
9007	Dredge ^b	Excavators	2	9	523	0.38	Diesel
9004	Dredge ^b	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
9006	Dredge ^b	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
9009	Dredge ^b	Tractors/Loaders/Backhoes	1	6	87	0.37	Diesel
9005	Dredge ^b	Tractors/Loaders/Backhoes	1	4	101	0.37	Diesel
9005	Dredge ^b	Scrapers	1	3	175	0.48	Diesel
9004	Dredge ^b	Scrapers	1	5	450	0.48	Diesel
9007	Dredge ^b	Scrapers	4	8	450	0.48	Diesel
9009	Dredge ^b	Scrapers	10	10	450	0.48	Diesel
9005	Dredge ^b	Off-Highway Trucks	1	1	375	0.38	Diesel
9004	Dredge ^b	Rollers	1	2	240	0.38	Diesel
9009	Dredge ^b	Rollers	2	10	240	0.38	Diesel
9007	Dredge ^b	Rollers	2	9	315	0.38	Diesel
9005	Dredge ^b	Rubber Tired Loaders	1	4	197	0.36	Diesel
9004	Dredge ^b	Rubber Tired Loaders	1	1	211	0.36	Diesel
9004	Dredge ^b	Rollers	1	1	150	0.38	Diesel
9005	Dredge ^b	Rollers	1	2	150	0.38	Diesel
9006	Dredge ^b	Rollers	1	0	150	0.38	Diesel
9007	Dredge ^b	Rollers	1	1	150	0.38	Diesel
9004	Dredge ^b	Crawler Tractors	1	0	70	0.43	Diesel
9005	Dredge ^b	Crawler Tractors	1	0	70	0.43	Diesel
9007	Dredge ^b	Crawler Tractors	2	5	70	0.43	Diesel
9004	Dredge ^b	Crawler Tractors	1	2	145	0.43	Diesel
9005	Dredge ^b	Crawler Tractors	1	2	145	0.43	Diesel
9007	Dredge ^b	Crawler Tractors	7	9	145	0.43	Diesel
9009	Dredge ^b	Crawler Tractors	2	10	145	0.43	Diesel
9008	Dredge ^b	Crawler Tractors	2	20	310	0.43	Diesel
9004	Dredge ^b	Crawler Tractors	1	2	410	0.43	Diesel
9007	Dredge ^b	Crawler Tractors	2	5	410	0.43	Diesel
9009	Dredge ^b	Crawler Tractors	2	10	410	0.43	Diesel
9007	Dredge ^b	Rubber Tired Loaders	1	8	145	0.36	Diesel
9004	Dredge ^b	Off-Highway Trucks	1	0	452	0.38	Diesel
9007	Dredge ^b	Off-Highway Trucks	1	7	452	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
9007	Dredge ^b	Off-Highway Trucks	6	9	650	0.38	Diesel
9005	Dredge ^b	Plate Compactors	1	2	8	0.43	Diesel
9004	Dredge ^b	Rollers	1	0	18	0.38	Diesel
9005	Dredge ^b	Cranes	1	10	160	0.29	Diesel
9004	Dredge ^b	Cranes	1	8	240	0.29	Diesel
9005	Dredge ^b	Cranes	1	1	240	0.29	Diesel
9005	Dredge ^b	Cranes	1	10	275	0.29	Diesel
9004	Dredge ^b	Scrapers	1	1	500	0.48	Diesel
9007	Dredge ^b	Scrapers	1	3	500	0.48	Diesel
9004	Dredge ^b	Excavators	1	0	315	0.38	Diesel
9007	Dredge ^b	Excavators	1	4	384	0.38	Diesel
9004	Dredge ^b	Generator Sets	1	7	12	0.74	Diesel
9007	Dredge ^b	Generator Sets	9	10	12	0.74	Diesel
9004	Dredge ^b	Cranes	1	8	335	0.29	Diesel
9005	Dredge ^b	Cranes	2	9	66	0.29	Diesel
9005	Dredge ^b	Generator Sets	1	0	107	0.74	Diesel
9004	Dredge ^b	Pumps	1	0	16	0.74	Diesel
9005	Dredge ^b	Pumps	1	2	16	0.74	Diesel
9008	Dredge ^b	Cranes	2	20	800	0.29	Diesel
9007	Dredge ^b	Pumps	1	3	16	0.74	Diesel
9007	Dredge ^b	Gas Pump	7	9	2	0.69	Gasoline
11111	Head of Old River Barrier ^b	Cranes	1	8	240	0.29	Diesel
11111	Head of Old River Barrier ^b	Excavators	1	8	165	0.38	Diesel
11111	Head of Old River Barrier ^b	Graders	1	8	215	0.41	Diesel
11111	Head of Old River Barrier ^b	Other Construction Equipment	1	8	325	0.42	Diesel
11111	Head of Old River Barrier ^b	Rollers	1	8	81	0.38	Diesel
11111	Head of Old River Barrier ^b	Rubber Tired Loaders	1	8	100	0.36	Diesel
11111	Head of Old River Barrier ^b	Rubber Tired Loaders	1	8	100	0.36	Diesel
11111	Head of Old River Barrier ^b	Scrapers	1	8	400	0.48	Diesel
11111	Head of Old River Barrier ^b	Tractors/Loaders/Backhoes	1	8	98	0.37	Diesel
11112	Head of Old River Barrier ^b	Cranes	1	8	240	0.29	Diesel
11112	Head of Old River Barrier ^b	Graders	1	8	215	0.41	Diesel
11112	Head of Old River Barrier ^b	Other Construction Equipment	1	8	325	0.42	Diesel
11112	Head of Old River Barrier ^b	Rollers	1	8	81	0.38	Diesel
11112	Head of Old River Barrier ^b	Rubber Tired Loaders	1	8	100	0.36	Diesel
11112	Head of Old River Barrier ^b	Scrapers	1	8	400	0.48	Diesel
11113	Head of Old River Barrier ^b	Cranes	1	8	240	0.29	Diesel
11113	Head of Old River Barrier ^b	Excavators	1	8	165	0.38	Diesel
11113	Head of Old River Barrier ^b	Graders	1	8	215	0.41	Diesel
11113	Head of Old River Barrier ^b	Other Construction Equipment	1	8	325	0.42	Diesel
11113	Head of Old River Barrier ^b	Rubber Tired Loaders	1	8	100	0.36	Diesel
10060	Intermediate Pump Plant ^b	Welders	1	1	48	0.45	Diesel
10060	Intermediate Pump Plant ^b	Air Compressors	2	9	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
10060	Intermediate Pump Plant ^b	Graders	1	1	215	0.41	Diesel
10060	Intermediate Pump Plant ^b	Tractors/Loaders/Backhoes	1	6	101	0.37	Diesel
10060	Intermediate Pump Plant ^b	Scrapers	1	2	175	0.48	Diesel
10060	Intermediate Pump Plant ^b	Off-Highway Trucks	1	1	375	0.38	Diesel
10060	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	6	197	0.36	Diesel
10060	Intermediate Pump Plant ^b	Rollers	1	1	150	0.38	Diesel
10060	Intermediate Pump Plant ^b	Crawler Tractors	1	0	70	0.43	Diesel
10060	Intermediate Pump Plant ^b	Crawler Tractors	1	1	145	0.43	Diesel
10060	Intermediate Pump Plant ^b	Plate Compactors	1	3	8	0.43	Diesel
10060	Intermediate Pump Plant ^b	Cranes	1	2	160	0.29	Diesel
10060	Intermediate Pump Plant ^b	Cranes	1	1	240	0.29	Diesel
10140	Intermediate Pump Plant ^b	Off-Highway Trucks	2	10	375	0.38	Diesel
10300	Intermediate Pump Plant ^b	Off-Highway Trucks	3	9	375	0.38	Diesel
10350	Intermediate Pump Plant ^b	Off-Highway Trucks	3	10	375	0.38	Diesel
10060	Intermediate Pump Plant ^b	Cranes	1	8	275	0.29	Diesel
10060	Intermediate Pump Plant ^b	Cranes	1	10	66	0.29	Diesel
10060	Intermediate Pump Plant ^b	Generator Sets	1	1	107	0.74	Diesel
10060	Intermediate Pump Plant ^b	Pumps	1	1	16	0.74	Diesel
10065	Intermediate Pump Plant ^b	Graders	1	1	158	0.41	Diesel
10065	Intermediate Pump Plant ^b	Tractors/Loaders/Backhoes	1	7	87	0.37	Diesel
10065	Intermediate Pump Plant ^b	Rollers	1	1	150	0.38	Diesel
10085	Intermediate Pump Plant ^b	Welders	1	2	48	0.45	Diesel
10085	Intermediate Pump Plant ^b	Crawler Tractors	1	9	24	0.43	Diesel
10085	Intermediate Pump Plant ^b	Rubber Tired Loaders	3	9	211	0.36	Diesel
10085	Intermediate Pump Plant ^b	Generator Sets	1	9	713	0.74	Diesel
10105	Intermediate Pump Plant ^b	Crushing/Proc. Equipment	1	2	85	0.78	Diesel
10105	Intermediate Pump Plant ^b	Graders	2	6	215	0.41	Diesel
10105	Intermediate Pump Plant ^b	Excavators	1	2	128	0.38	Diesel
10105	Intermediate Pump Plant ^b	Scrapers	4	9	450	0.48	Diesel
10105	Intermediate Pump Plant ^b	Rollers	1	8	315	0.38	Diesel
10105	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	6	211	0.36	Diesel
10105	Intermediate Pump Plant ^b	Rollers	1	6	150	0.38	Diesel
10105	Intermediate Pump Plant ^b	Crawler Tractors	2	10	580	0.43	Diesel
10105	Intermediate Pump Plant ^b	Crawler Tractors	3	9	145	0.43	Diesel
10105	Intermediate Pump Plant ^b	Excavators	1	5	315	0.38	Diesel
10105	Intermediate Pump Plant ^b	Pumps	2	7	16	0.74	Diesel
10105	Intermediate Pump Plant ^b	Bore/Drill Rigs	11	10	206	0.50	Diesel
10110	Intermediate Pump Plant ^b	Pavers	1	0	224	0.42	Diesel
10110	Intermediate Pump Plant ^b	Rollers	1	0	110	0.38	Diesel
10110	Intermediate Pump Plant ^b	Rollers	1	0	131	0.38	Diesel
10110	Intermediate Pump Plant ^b	Crawler Tractors	1	3	24	0.43	Diesel
10110	Intermediate Pump Plant ^b	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
10110	Intermediate Pump Plant ^b	Graders	1	0	158	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
10110	Intermediate Pump Plant ^b	Graders	2	5	215	0.41	Diesel
10110	Intermediate Pump Plant ^b	Excavators	1	0	128	0.38	Diesel
10110	Intermediate Pump Plant ^b	Excavators	1	8	523	0.38	Diesel
10110	Intermediate Pump Plant ^b	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
10110	Intermediate Pump Plant ^b	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
10110	Intermediate Pump Plant ^b	Off-Highway Trucks	1	4	375	0.38	Diesel
10110	Intermediate Pump Plant ^b	Off-Highway Trucks	3	8	489	0.38	Diesel
10110	Intermediate Pump Plant ^b	Rollers	1	1	240	0.38	Diesel
10110	Intermediate Pump Plant ^b	Rollers	1	8	315	0.38	Diesel
10110	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	2	197	0.36	Diesel
10110	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	1	211	0.36	Diesel
10110	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	4	250	0.36	Diesel
10110	Intermediate Pump Plant ^b	Rollers	1	3	150	0.38	Diesel
10110	Intermediate Pump Plant ^b	Crawler Tractors	1	2	70	0.43	Diesel
10110	Intermediate Pump Plant ^b	Crawler Tractors	3	9	145	0.43	Diesel
10110	Intermediate Pump Plant ^b	Off-Highway Trucks	7	9	650	0.38	Diesel
10110	Intermediate Pump Plant ^b	Plate Compactors	1	2	8	0.43	Diesel
10110	Intermediate Pump Plant ^b	Pavers	1	1	92	0.42	Diesel
10110	Intermediate Pump Plant ^b	Excavators	1	2	384	0.38	Diesel
10110	Intermediate Pump Plant ^b	Generator Sets	5	8	12	0.74	Diesel
10110	Intermediate Pump Plant ^b	Pumps	1	2	16	0.74	Diesel
10115	Intermediate Pump Plant ^b	Graders	7	9	215	0.41	Diesel
10115	Intermediate Pump Plant ^b	Rollers	4	10	315	0.38	Diesel
10115	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	4	501	0.36	Diesel
10115	Intermediate Pump Plant ^b	Rubber Tired Loaders	4	10	800	0.36	Diesel
10115	Intermediate Pump Plant ^b	Rollers	1	4	150	0.38	Diesel
10115	Intermediate Pump Plant ^b	Crawler Tractors	11	9	310	0.43	Diesel
10115	Intermediate Pump Plant ^b	Crawler Tractors	2	9	410	0.43	Diesel
10115	Intermediate Pump Plant ^b	Off-Highway Trucks	1	8	650	0.38	Diesel
10115	Intermediate Pump Plant ^b	Off-Highway Trucks	19	10	1000	0.38	Diesel
10115	Intermediate Pump Plant ^b	Plate Compactors	5	8	8	0.43	Diesel
10115	Intermediate Pump Plant ^b	Scrapers	1	5	500	0.48	Diesel
10115	Intermediate Pump Plant ^b	Excavators	3	8	908	0.38	Diesel
10115	Intermediate Pump Plant ^b	Generator Sets	17	10	12	0.74	Diesel
10115	Intermediate Pump Plant ^b	Pumps	2	9	60	0.74	Diesel
10120	Intermediate Pump Plant ^b	Graders	1	1	215	0.41	Diesel
10120	Intermediate Pump Plant ^b	Off-Highway Trucks	1	1	489	0.38	Diesel
10120	Intermediate Pump Plant ^b	Crawler Tractors	2	9	242	0.43	Diesel
10120	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
10120	Intermediate Pump Plant ^b	Rollers	1	0	150	0.38	Diesel
10120	Intermediate Pump Plant ^b	Cranes	2	5	160	0.29	Diesel
10120	Intermediate Pump Plant ^b	Cranes	2	9	240	0.29	Diesel
10120	Intermediate Pump Plant ^b	Scrapers	1	0	500	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
10120	Intermediate Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
10120	Intermediate Pump Plant ^b	Other Construction Equipment	2	9	92	0.42	Diesel
10120	Intermediate Pump Plant ^b	Pumps	1	0	60	0.74	Diesel
10130	Intermediate Pump Plant ^b	Welders	3	10	48	0.45	Diesel
10130	Intermediate Pump Plant ^b	Air Compressors	2	7	500	0.48	Diesel
10130	Intermediate Pump Plant ^b	Air Compressors	1	0	115	0.48	Diesel
10130	Intermediate Pump Plant ^b	Pumps	1	8	210	0.74	Diesel
10130	Intermediate Pump Plant ^b	Cranes	5	8	365	0.29	Diesel
10130	Intermediate Pump Plant ^b	Generator Sets	2	7	143	0.74	Diesel
10135	Intermediate Pump Plant ^b	Air Compressors	1	10	80	0.48	Diesel
10135	Intermediate Pump Plant ^b	Cranes	1	10	160	0.29	Diesel
10135	Intermediate Pump Plant ^b	Cranes	1	10	66	0.29	Diesel
10140	Intermediate Pump Plant ^b	Cranes	3	7	335	0.29	Diesel
10145	Intermediate Pump Plant ^b	Welders	1	3	48	0.45	Diesel
10145	Intermediate Pump Plant ^b	Cranes	2	6	335	0.29	Diesel
10150	Intermediate Pump Plant ^b	Pumps	1	5	210	0.74	Diesel
10150	Intermediate Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
10155	Intermediate Pump Plant ^b	Air Compressors	1	4	80	0.48	Diesel
10155	Intermediate Pump Plant ^b	Cranes	1	2	160	0.29	Diesel
10155	Intermediate Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
10155	Intermediate Pump Plant ^b	Cranes	1	1	275	0.29	Diesel
10155	Intermediate Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
10160	Intermediate Pump Plant ^b	Cranes	3	8	66	0.29	Diesel
10170	Intermediate Pump Plant ^b	Welders	1	1	48	0.45	Diesel
10170	Intermediate Pump Plant ^b	Air Compressors	1	7	80	0.48	Diesel
10170	Intermediate Pump Plant ^b	Graders	1	0	158	0.41	Diesel
10170	Intermediate Pump Plant ^b	Off-Highway Trucks	1	1	375	0.38	Diesel
10170	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	0	197	0.36	Diesel
10170	Intermediate Pump Plant ^b	Rollers	1	0	150	0.38	Diesel
10170	Intermediate Pump Plant ^b	Crawler Tractors	1	0	70	0.43	Diesel
10170	Intermediate Pump Plant ^b	Crawler Tractors	1	0	145	0.43	Diesel
10170	Intermediate Pump Plant ^b	Off-Highway Trucks	1	0	452	0.38	Diesel
10170	Intermediate Pump Plant ^b	Cranes	1	7	160	0.29	Diesel
10170	Intermediate Pump Plant ^b	Cranes	1	3	240	0.29	Diesel
10170	Intermediate Pump Plant ^b	Excavators	1	0	384	0.38	Diesel
10170	Intermediate Pump Plant ^b	Cranes	1	7	66	0.29	Diesel
10170	Intermediate Pump Plant ^b	Generator Sets	1	1	107	0.74	Diesel
10200	Intermediate Pump Plant ^b	Welders	3	7	48	0.45	Diesel
10200	Intermediate Pump Plant ^b	Air Compressors	2	5	500	0.48	Diesel
10200	Intermediate Pump Plant ^b	Air Compressors	1	1	80	0.48	Diesel
10200	Intermediate Pump Plant ^b	Air Compressors	1	2	115	0.48	Diesel
10200	Intermediate Pump Plant ^b	Graders	1	6	215	0.41	Diesel
10200	Intermediate Pump Plant ^b	Graders	1	1	350	0.41	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
10200	Intermediate Pump Plant ^b	Off-Highway Trucks	2	10	489	0.38	Diesel
10200	Intermediate Pump Plant ^b	Rollers	1	9	315	0.38	Diesel
10200	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	5	800	0.36	Diesel
10200	Intermediate Pump Plant ^b	Rollers	1	0	150	0.38	Diesel
10200	Intermediate Pump Plant ^b	Crawler Tractors	1	1	310	0.43	Diesel
10200	Intermediate Pump Plant ^b	Crawler Tractors	2	5	410	0.43	Diesel
10200	Intermediate Pump Plant ^b	Off-Highway Trucks	1	3	1000	0.38	Diesel
10200	Intermediate Pump Plant ^b	Pumps	2	9	210	0.74	Diesel
10200	Intermediate Pump Plant ^b	Scrapers	1	6	500	0.48	Diesel
10200	Intermediate Pump Plant ^b	Excavators	1	1	908	0.38	Diesel
10200	Intermediate Pump Plant ^b	Generator Sets	1	7	12	0.74	Diesel
10200	Intermediate Pump Plant ^b	Cranes	2	5	365	0.29	Diesel
10200	Intermediate Pump Plant ^b	Generator Sets	2	5	143	0.74	Diesel
10200	Intermediate Pump Plant ^b	Pumps	1	6	60	0.74	Diesel
10300	Intermediate Pump Plant ^b	Welders	1	6	48	0.45	Diesel
10300	Intermediate Pump Plant ^b	Air Compressors	1	3	500	0.48	Diesel
10300	Intermediate Pump Plant ^b	Air Compressors	1	0	80	0.48	Diesel
10300	Intermediate Pump Plant ^b	Air Compressors	1	1	115	0.48	Diesel
10300	Intermediate Pump Plant ^b	Graders	1	0	215	0.41	Diesel
10300	Intermediate Pump Plant ^b	Graders	1	1	350	0.41	Diesel
10300	Intermediate Pump Plant ^b	Off-Highway Trucks	1	0	489	0.38	Diesel
10300	Intermediate Pump Plant ^b	Crawler Tractors	1	3	242	0.43	Diesel
10300	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
10300	Intermediate Pump Plant ^b	Rollers	1	0	150	0.38	Diesel
10300	Intermediate Pump Plant ^b	Crawler Tractors	1	0	310	0.43	Diesel
10300	Intermediate Pump Plant ^b	Off-Highway Trucks	1	3	452	0.38	Diesel
10300	Intermediate Pump Plant ^b	Off-Highway Trucks	1	3	650	0.38	Diesel
10300	Intermediate Pump Plant ^b	Pumps	1	2	210	0.74	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	1	160	0.29	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	0	275	0.29	Diesel
10300	Intermediate Pump Plant ^b	Scrapers	1	1	500	0.48	Diesel
10300	Intermediate Pump Plant ^b	Excavators	1	1	384	0.38	Diesel
10300	Intermediate Pump Plant ^b	Excavators	1	1	908	0.38	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	8	335	0.29	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
10300	Intermediate Pump Plant ^b	Cranes	1	8	365	0.29	Diesel
10300	Intermediate Pump Plant ^b	Generator Sets	1	3	143	0.74	Diesel
10300	Intermediate Pump Plant ^b	Other Construction Equipment	1	2	92	0.42	Diesel
10300	Intermediate Pump Plant ^b	Other construction equipment	1	1	325	0.42	Diesel
10350	Intermediate Pump Plant ^b	Welders	2	6	48	0.45	Diesel
10350	Intermediate Pump Plant ^b	Air Compressors	1	3	500	0.48	Diesel
10350	Intermediate Pump Plant ^b	Air Compressors	1	1	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
10350	Intermediate Pump Plant ^b	Air Compressors	1	0	115	0.48	Diesel
10350	Intermediate Pump Plant ^b	Graders	1	2	215	0.41	Diesel
10350	Intermediate Pump Plant ^b	Graders	1	1	350	0.41	Diesel
10350	Intermediate Pump Plant ^b	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
10350	Intermediate Pump Plant ^b	Off-Highway Trucks	1	0	489	0.38	Diesel
10350	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	0	211	0.36	Diesel
10350	Intermediate Pump Plant ^b	Crawler Tractors	1	4	242	0.43	Diesel
10350	Intermediate Pump Plant ^b	Rubber Tired Loaders	1	1	501	0.36	Diesel
10350	Intermediate Pump Plant ^b	Rollers	1	1	150	0.38	Diesel
10350	Intermediate Pump Plant ^b	Crawler Tractors	1	2	310	0.43	Diesel
10350	Intermediate Pump Plant ^b	Crawler Tractors	1	1	410	0.43	Diesel
10350	Intermediate Pump Plant ^b	Off-Highway Trucks	1	6	650	0.38	Diesel
10350	Intermediate Pump Plant ^b	Plate Compactors	1	0	8	0.43	Diesel
10350	Intermediate Pump Plant ^b	Rollers	1	1	18	0.38	Diesel
10350	Intermediate Pump Plant ^b	Pumps	1	8	210	0.74	Diesel
10350	Intermediate Pump Plant ^b	Cranes	1	1	160	0.29	Diesel
10350	Intermediate Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
10350	Intermediate Pump Plant ^b	Scrapers	1	1	500	0.48	Diesel
10350	Intermediate Pump Plant ^b	Excavators	1	1	384	0.38	Diesel
10350	Intermediate Pump Plant ^b	Excavators	1	1	908	0.38	Diesel
10350	Intermediate Pump Plant ^b	Generator Sets	1	5	12	0.74	Diesel
10350	Intermediate Pump Plant ^b	Cranes	1	4	335	0.29	Diesel
10350	Intermediate Pump Plant ^b	Cranes	2	7	335	0.29	Diesel
10350	Intermediate Pump Plant ^b	Cranes	1	10	365	0.29	Diesel
10350	Intermediate Pump Plant ^b	Generator Sets	1	3	143	0.74	Diesel
10350	Intermediate Pump Plant ^b	Generator Sets	1	0	107	0.74	Diesel
10350	Intermediate Pump Plant ^b	Other Construction Equipment	1	1	92	0.42	Diesel
10350	Intermediate Pump Plant ^b	Other construction equipment	1	3	325	0.42	Diesel
10350	Intermediate Pump Plant ^b	Pumps	1	1	60	0.74	Diesel
10350	Intermediate Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
6040	Pipelines ^v	Graders	1	0	158	0.41	Diesel
6040	Pipelines ^v	Graders	1	4	215	0.41	Diesel
6040	Pipelines ^v	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
6040	Pipelines ^v	Scrapers	1	9	450	0.48	Diesel
6040	Pipelines ^v	Rollers	1	3	240	0.38	Diesel
6040	Pipelines ^v	Rubber Tired Loaders	1	3	211	0.36	Diesel
6040	Pipelines ^v	Rubber Tired Loaders	1	3	501	0.36	Diesel
6040	Pipelines ^v	Rollers	1	3	150	0.38	Diesel
6040	Pipelines ^v	Crawler Tractors	1	0	70	0.43	Diesel
6040	Pipelines ^v	Crawler Tractors	1	6	145	0.43	Diesel
6040	Pipelines ^v	Crawler Tractors	1	3	310	0.43	Diesel
6040	Pipelines ^v	Crawler Tractors	1	3	410	0.43	Diesel
6040	Pipelines ^v	Off-Highway Trucks	2	7	452	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
6040	Pipelines ^v	Rollers	1	1	18	0.38	Diesel
6040	Pipelines ^v	Scrapers	1	2	500	0.48	Diesel
6040	Pipelines ^v	Excavators	1	0	315	0.38	Diesel
6040	Pipelines ^v	Generator Sets	2	6	12	0.74	Diesel
6040	Pipelines ^v	Pumps	1	1	16	0.74	Diesel
6050	Pipelines ^v	Welders	1	0	48	0.45	Diesel
6050	Pipelines ^v	Air Compressors	1	6	80	0.48	Diesel
6050	Pipelines ^v	Graders	1	0	215	0.41	Diesel
6050	Pipelines ^v	Tractors/Loaders/Backhoes	1	2	101	0.37	Diesel
6050	Pipelines ^v	Scrapers	1	1	175	0.48	Diesel
6050	Pipelines ^v	Off-Highway Trucks	1	0	375	0.38	Diesel
6050	Pipelines ^v	Rubber Tired Loaders	1	2	197	0.36	Diesel
6050	Pipelines ^v	Rollers	1	0	150	0.38	Diesel
6050	Pipelines ^v	Crawler Tractors	1	0	70	0.43	Diesel
6050	Pipelines ^v	Crawler Tractors	1	0	145	0.43	Diesel
6050	Pipelines ^v	Plate Compactors	1	1	8	0.43	Diesel
6050	Pipelines ^v	Cranes	1	1	160	0.29	Diesel
6050	Pipelines ^v	Cranes	1	0	240	0.29	Diesel
6050	Pipelines ^v	Cranes	1	1	275	0.29	Diesel
6050	Pipelines ^v	Cranes	1	3	66	0.29	Diesel
6050	Pipelines ^v	Generator Sets	1	0	107	0.74	Diesel
6050	Pipelines ^v	Pumps	1	0	16	0.74	Diesel
6060	Pipelines ^v	Welders	1	1	48	0.45	Diesel
6060	Pipelines ^v	Crawler Tractors	1	3	24	0.43	Diesel
6060	Pipelines ^v	Rubber Tired Loaders	1	6	211	0.36	Diesel
6060	Pipelines ^v	Generator Sets	1	3	713	0.74	Diesel
6070	Pipelines ^v	Graders	1	1	158	0.41	Diesel
6070	Pipelines ^v	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel
6070	Pipelines ^v	Rollers	1	1	150	0.38	Diesel
6070	Pipelines ^v	Crawler Tractors	1	0	145	0.43	Diesel
6070	Pipelines ^v	Off-Highway Trucks	1	0	452	0.38	Diesel
6070	Pipelines ^v	Excavators	1	0	315	0.38	Diesel
6110	Pipelines ^v	Crushing/Proc. Equipment	1	0	85	0.78	Diesel
6110	Pipelines ^v	Graders	3	8	215	0.41	Diesel
6110	Pipelines ^v	Graders	2	7	350	0.41	Diesel
6110	Pipelines ^v	Excavators	1	0	128	0.38	Diesel
6110	Pipelines ^v	Tractors/Loaders/Backhoes	1	0	101	0.37	Diesel
6110	Pipelines ^v	Scrapers	1	0	175	0.48	Diesel
6110	Pipelines ^v	Rubber Tired Loaders	1	4	211	0.36	Diesel
6110	Pipelines ^v	Crawler Tractors	1	9	242	0.43	Diesel
6110	Pipelines ^v	Rubber Tired Loaders	2	6	501	0.36	Diesel
6110	Pipelines ^v	Rollers	3	7	150	0.38	Diesel
6110	Pipelines ^v	Crawler Tractors	1	1	145	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
6110	Pipelines ^v	Crawler Tractors	2	9	310	0.43	Diesel
6110	Pipelines ^v	Off-Highway Trucks	7	9	650	0.38	Diesel
6110	Pipelines ^v	Rollers	4	9	18	0.38	Diesel
6110	Pipelines ^v	Cranes	1	1	240	0.29	Diesel
6110	Pipelines ^v	Scrapers	2	7	500	0.48	Diesel
6110	Pipelines ^v	Excavators	2	7	908	0.38	Diesel
6110	Pipelines ^v	Cranes	3	8	335	0.29	Diesel
6110	Pipelines ^v	Cranes	1	1	335	0.29	Diesel
6110	Pipelines ^v	Pumps	24	20	16	0.74	Diesel
6110	Pipelines ^v	Off-Highway Trucks	8	9	375	0.38	Diesel
6110	Pipelines ^v	Bore/Drill Rigs	1	5	206	0.50	Diesel
6120	Pipelines ^v	Welders	1	7	48	0.45	Diesel
6120	Pipelines ^v	Air Compressors	1	1	500	0.48	Diesel
6120	Pipelines ^v	Air Compressors	1	2	115	0.48	Diesel
6120	Pipelines ^v	Graders	1	0	215	0.41	Diesel
6120	Pipelines ^v	Graders	1	1	350	0.41	Diesel
6120	Pipelines ^v	Crawler Tractors	1	2	242	0.43	Diesel
6120	Pipelines ^v	Rubber Tired Loaders	1	0	501	0.36	Diesel
6120	Pipelines ^v	Off-Highway Trucks	1	5	452	0.38	Diesel
6120	Pipelines ^v	Off-Highway Trucks	1	4	650	0.38	Diesel
6120	Pipelines ^v	Pumps	1	2	210	0.74	Diesel
6120	Pipelines ^v	Cranes	1	2	240	0.29	Diesel
6120	Pipelines ^v	Scrapers	1	1	500	0.48	Diesel
6120	Pipelines ^v	Excavators	1	2	384	0.38	Diesel
6120	Pipelines ^v	Excavators	1	1	908	0.38	Diesel
6120	Pipelines ^v	Cranes	1	4	335	0.29	Diesel
6120	Pipelines ^v	Cranes	1	3	335	0.29	Diesel
6120	Pipelines ^v	Cranes	1	2	365	0.29	Diesel
6120	Pipelines ^v	Generator Sets	1	1	143	0.74	Diesel
6120	Pipelines ^v	Generator Sets	1	1	107	0.74	Diesel
6120	Pipelines ^v	Other construction equipment	1	3	325	0.42	Diesel
6120	Pipelines ^v	Off-Highway Trucks	2	7	375	0.38	Diesel
6120	Pipelines ^v	Bore/Drill Rigs	1	4	206	0.50	Diesel
6130	Pipelines ^v	Welders	1	1	48	0.45	Diesel
6130	Pipelines ^v	Air Compressors	1	0	80	0.48	Diesel
6130	Pipelines ^v	Graders	2	6	215	0.41	Diesel
6130	Pipelines ^v	Graders	1	2	350	0.41	Diesel
6130	Pipelines ^v	Rubber Tired Loaders	1	0	211	0.36	Diesel
6130	Pipelines ^v	Crawler Tractors	2	6	242	0.43	Diesel
6130	Pipelines ^v	Rubber Tired Loaders	1	2	501	0.36	Diesel
6130	Pipelines ^v	Rollers	3	7	150	0.38	Diesel
6130	Pipelines ^v	Crawler Tractors	3	7	310	0.43	Diesel
6130	Pipelines ^v	Off-Highway Trucks	1	9	650	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
6130	Pipelines ^v	Rollers	5	8	18	0.38	Diesel
6130	Pipelines ^v	Pumps	1	1	210	0.74	Diesel
6130	Pipelines ^v	Cranes	1	1	160	0.29	Diesel
6130	Pipelines ^v	Cranes	1	1	240	0.29	Diesel
6130	Pipelines ^v	Scrapers	2	5	500	0.48	Diesel
6130	Pipelines ^v	Excavators	1	2	908	0.38	Diesel
6130	Pipelines ^v	Cranes	1	4	335	0.29	Diesel
6130	Pipelines ^v	Cranes	1	1	335	0.29	Diesel
6130	Pipelines ^v	Generator Sets	1	1	107	0.74	Diesel
6130	Pipelines ^v	Other Construction Equipment	1	1	92	0.42	Diesel
6130	Pipelines ^v	Off-Highway Trucks	2	6	375	0.38	Diesel
6130	Pipelines ^v	Bore/Drill Rigs	1	3	206	0.50	Diesel
6140	Pipelines ^v	Air Compressors	1	3	80	0.48	Diesel
6140	Pipelines ^v	Air Compressors	1	0	115	0.48	Diesel
6140	Pipelines ^v	Graders	1	2	215	0.41	Diesel
6140	Pipelines ^v	Graders	1	1	350	0.41	Diesel
6140	Pipelines ^v	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
6140	Pipelines ^v	Rubber Tired Loaders	1	0	211	0.36	Diesel
6140	Pipelines ^v	Crawler Tractors	1	3	242	0.43	Diesel
6140	Pipelines ^v	Rubber Tired Loaders	1	1	501	0.36	Diesel
6140	Pipelines ^v	Rollers	1	1	150	0.38	Diesel
6140	Pipelines ^v	Crawler Tractors	1	1	310	0.43	Diesel
6140	Pipelines ^v	Off-Highway Trucks	1	1	452	0.38	Diesel
6140	Pipelines ^v	Off-Highway Trucks	1	4	650	0.38	Diesel
6140	Pipelines ^v	Plate Compactors	1	0	8	0.43	Diesel
6140	Pipelines ^v	Rollers	1	2	18	0.38	Diesel
6140	Pipelines ^v	Pumps	1	2	210	0.74	Diesel
6140	Pipelines ^v	Cranes	1	3	160	0.29	Diesel
6140	Pipelines ^v	Cranes	1	3	240	0.29	Diesel
6140	Pipelines ^v	Scrapers	1	1	500	0.48	Diesel
6140	Pipelines ^v	Excavators	1	0	384	0.38	Diesel
6140	Pipelines ^v	Excavators	1	1	908	0.38	Diesel
6140	Pipelines ^v	Cranes	6	20	335	0.29	Diesel
6140	Pipelines ^v	Cranes	1	3	335	0.29	Diesel
6140	Pipelines ^v	Other Construction Equipment	1	3	92	0.42	Diesel
6140	Pipelines ^v	Off-Highway Trucks	2	8	375	0.38	Diesel
6140	Pipelines ^v	Bore/Drill Rigs	1	3	206	0.50	Diesel
6150	Pipelines ^v	Welders	1	0	48	0.45	Diesel
6150	Pipelines ^v	Air Compressors	1	1	80	0.48	Diesel
6150	Pipelines ^v	Air Compressors	1	0	115	0.48	Diesel
6150	Pipelines ^v	Graders	1	2	215	0.41	Diesel
6150	Pipelines ^v	Graders	1	1	350	0.41	Diesel
6150	Pipelines ^v	Tractors/Loaders/Backhoes	1	1	87	0.37	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
6150	Pipelines ^v	Rubber Tired Loaders	1	2	501	0.36	Diesel
6150	Pipelines ^v	Rollers	1	2	150	0.38	Diesel
6150	Pipelines ^v	Crawler Tractors	1	1	310	0.43	Diesel
6150	Pipelines ^v	Off-Highway Trucks	1	7	650	0.38	Diesel
6150	Pipelines ^v	Plate Compactors	1	4	8	0.43	Diesel
6150	Pipelines ^v	Pumps	1	5	210	0.74	Diesel
6150	Pipelines ^v	Cranes	1	0	160	0.29	Diesel
6150	Pipelines ^v	Cranes	1	2	275	0.29	Diesel
6150	Pipelines ^v	Scrapers	1	1	500	0.48	Diesel
6150	Pipelines ^v	Excavators	1	1	384	0.38	Diesel
6150	Pipelines ^v	Cranes	1	1	335	0.29	Diesel
6150	Pipelines ^v	Cranes	1	0	335	0.29	Diesel
6150	Pipelines ^v	Bore/Drill Rigs	1	4	206	0.50	Diesel
6160	Pipelines ^v	Welders	1	0	48	0.45	Diesel
6160	Pipelines ^v	Air Compressors	1	0	80	0.48	Diesel
6160	Pipelines ^v	Air Compressors	1	0	115	0.48	Diesel
6160	Pipelines ^v	Graders	1	2	215	0.41	Diesel
6160	Pipelines ^v	Graders	1	1	350	0.41	Diesel
6160	Pipelines ^v	Tractors/Loaders/Backhoes	1	0	87	0.37	Diesel
6160	Pipelines ^v	Rubber Tired Loaders	1	0	160	0.36	Diesel
6160	Pipelines ^v	Rubber Tired Loaders	1	0	250	0.36	Diesel
6160	Pipelines ^v	Crawler Tractors	1	1	242	0.43	Diesel
6160	Pipelines ^v	Rubber Tired Loaders	1	2	501	0.36	Diesel
6160	Pipelines ^v	Rollers	1	2	150	0.38	Diesel
6160	Pipelines ^v	Crawler Tractors	1	1	310	0.43	Diesel
6160	Pipelines ^v	Crawler Tractors	1	1	410	0.43	Diesel
6160	Pipelines ^v	Off-Highway Trucks	1	5	650	0.38	Diesel
6160	Pipelines ^v	Off-Highway Trucks	1	2	1000	0.38	Diesel
6160	Pipelines ^v	Plate Compactors	1	2	8	0.43	Diesel
6160	Pipelines ^v	Pumps	1	1	210	0.74	Diesel
6160	Pipelines ^v	Excavators	1	0	163	0.38	Diesel
6160	Pipelines ^v	Cranes	1	0	160	0.29	Diesel
6160	Pipelines ^v	Cranes	1	1	240	0.29	Diesel
6160	Pipelines ^v	Cranes	1	0	275	0.29	Diesel
6160	Pipelines ^v	Scrapers	1	1	500	0.48	Diesel
6160	Pipelines ^v	Excavators	1	1	384	0.38	Diesel
6160	Pipelines ^v	Excavators	1	1	908	0.38	Diesel
6160	Pipelines ^v	Generator Sets	1	5	12	0.74	Diesel
6160	Pipelines ^v	Cranes	1	1	335	0.29	Diesel
6160	Pipelines ^v	Cranes	1	1	335	0.29	Diesel
6160	Pipelines ^v	Other Construction Equipment	1	1	92	0.42	Diesel
6160	Pipelines ^v	Pumps	1	1	60	0.74	Diesel
6160	Pipelines ^v	Bore/Drill Rigs	1	2	206	0.50	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1085	Pump Plant ^b	Welders	1	1	48	0.45	Diesel
1085	Pump Plant ^b	Crawler Tractors	1	3	24	0.43	Diesel
1085	Pump Plant ^b	Rubber Tired Loaders	1	8	211	0.36	Diesel
1085	Pump Plant ^b	Generator Sets	1	3	713	0.74	Diesel
2605	Pump Plant ^b	Crawler Tractors	1	0	24	0.43	Diesel
2605	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
2605	Pump Plant ^b	Excavators	1	16	523	0.38	Diesel
2605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
2605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	16	101	0.37	Diesel
2605	Pump Plant ^b	Off-Highway Trucks	4	16	375	0.38	Diesel
2605	Pump Plant ^b	Rubber Tired Loaders	1	16	211	0.36	Diesel
2605	Pump Plant ^b	Rubber Tired Loaders	1	16	160	0.36	Diesel
2605	Pump Plant ^b	Crawler Tractors	1	4	70	0.43	Diesel
2605	Pump Plant ^b	Crawler Tractors	1	18	145	0.43	Diesel
2605	Pump Plant ^b	Rubber Tired Loaders	1	2	145	0.36	Diesel
2605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	80	0.37	Diesel
2605	Pump Plant ^b	Cranes	1	16	275	0.29	Diesel
2605	Pump Plant ^b	Excavators	1	16	315	0.38	Diesel
2605	Pump Plant ^b	Pumps	1	16	60	0.74	Diesel
2605	Pump Plant ^b	Gas Pump	1	16	2	0.69	Gasoline
2665	Pump Plant ^b	Off-Highway Trucks	1	10	375	0.38	Diesel
2670	Pump Plant ^b	Off-Highway Trucks	2	8	375	0.38	Diesel
2675	Pump Plant ^b	Off-Highway Trucks	4	10	375	0.38	Diesel
3665	Pump Plant ^b	Off-Highway Trucks	1	10	375	0.38	Diesel
3670	Pump Plant ^b	Off-Highway Trucks	2	8	375	0.38	Diesel
3675	Pump Plant ^b	Off-Highway Trucks	4	10	375	0.38	Diesel
5665	Pump Plant ^b	Off-Highway Trucks	1	10	375	0.38	Diesel
5670	Pump Plant ^b	Off-Highway Trucks	2	8	375	0.38	Diesel
2610	Pump Plant ^b	Pavers	1	1	224	0.42	Diesel
2610	Pump Plant ^b	Rollers	1	1	110	0.38	Diesel
2610	Pump Plant ^b	Rollers	1	1	131	0.38	Diesel
2610	Pump Plant ^b	Crawler Tractors	1	5	24	0.43	Diesel
2610	Pump Plant ^b	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
2610	Pump Plant ^b	Graders	1	1	158	0.41	Diesel
2610	Pump Plant ^b	Graders	1	19	215	0.41	Diesel
2610	Pump Plant ^b	Excavators	1	1	128	0.38	Diesel
2610	Pump Plant ^b	Excavators	1	16	523	0.38	Diesel
2610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
2610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	101	0.37	Diesel
2610	Pump Plant ^b	Off-Highway Trucks	1	8	375	0.38	Diesel
2610	Pump Plant ^b	Off-Highway Trucks	3	16	489	0.38	Diesel
2610	Pump Plant ^b	Rollers	1	1	240	0.38	Diesel
2610	Pump Plant ^b	Rollers	1	16	315	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2610	Pump Plant ^b	Rubber Tired Loaders	1	5	197	0.36	Diesel
2610	Pump Plant ^b	Rubber Tired Loaders	1	1	211	0.36	Diesel
2610	Pump Plant ^b	Rubber Tired Loaders	1	9	250	0.36	Diesel
2610	Pump Plant ^b	Rollers	1	4	150	0.38	Diesel
2610	Pump Plant ^b	Crawler Tractors	1	4	70	0.43	Diesel
2610	Pump Plant ^b	Crawler Tractors	3	18	145	0.43	Diesel
2610	Pump Plant ^b	Off-Highway Trucks	7	18	650	0.38	Diesel
2610	Pump Plant ^b	Plate Compactors	1	4	8	0.43	Diesel
2610	Pump Plant ^b	Pavers	1	1	92	0.42	Diesel
2610	Pump Plant ^b	Excavators	1	3	384	0.38	Diesel
2610	Pump Plant ^b	Generator Sets	5	16	12	0.74	Diesel
2610	Pump Plant ^b	Pumps	1	4	16	0.74	Diesel
2615	Pump Plant ^b	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
2615	Pump Plant ^b	Bore/Drill Rigs	2	19	210	0.50	Diesel
2615	Pump Plant ^b	Cranes	2	19	160	0.29	Diesel
2620	Pump Plant ^b	Graders	1	2	158	0.41	Diesel
2620	Pump Plant ^b	Rollers	1	10	150	0.38	Diesel
2620	Pump Plant ^b	Crawler Tractors	1	10	70	0.43	Diesel
2620	Pump Plant ^b	Crawler Tractors	1	10	145	0.43	Diesel
2620	Pump Plant ^b	Crawler Tractors	1	10	310	0.43	Diesel
2620	Pump Plant ^b	Off-Highway Trucks	8	10	452	0.38	Diesel
2620	Pump Plant ^b	Excavators	1	10	384	0.38	Diesel
2620	Pump Plant ^b	Bore/Drill Rigs	1	10	206	0.50	Diesel
2630	Pump Plant ^b	Crawler Tractors	1	8	242	0.43	Diesel
2630	Pump Plant ^b	Cranes	2	5	240	0.29	Diesel
2630	Pump Plant ^b	Cranes	2	8	335	0.29	Diesel
2630	Pump Plant ^b	Other Construction Equipment	1	8	92	0.42	Diesel
2635	Pump Plant ^b	Welders	3	8	48	0.45	Diesel
2635	Pump Plant ^b	Air Compressors	1	3	500	0.48	Diesel
2635	Pump Plant ^b	Pumps	1	2	210	0.74	Diesel
2635	Pump Plant ^b	Cranes	1	8	100	0.29	Diesel
2635	Pump Plant ^b	Cranes	1	3	375	0.29	Diesel
2635	Pump Plant ^b	Generator Sets	1	3	143	0.74	Diesel
2635	Pump Plant ^b	Generator Sets	2	8	107	0.74	Diesel
2640	Pump Plant ^b	Welders	1	4	48	0.45	Diesel
2640	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
2645	Pump Plant ^b	Welders	1	0	48	0.45	Diesel
2645	Pump Plant ^b	Air Compressors	1	5	80	0.48	Diesel
2645	Pump Plant ^b	Cranes	1	5	160	0.29	Diesel
2645	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
2645	Pump Plant ^b	Cranes	1	9	66	0.29	Diesel
2650	Pump Plant ^b	Welders	1	1	48	0.45	Diesel
2650	Pump Plant ^b	Air Compressors	1	1	115	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2650	Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
2650	Pump Plant ^b	Cranes	1	2	275	0.29	Diesel
2650	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
2650	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
2655	Pump Plant ^b	Air Compressors	2	6	80	0.48	Diesel
2655	Pump Plant ^b	Cranes	2	6	160	0.29	Diesel
2655	Pump Plant ^b	Cranes	2	6	66	0.29	Diesel
2665	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
2670	Pump Plant ^b	Welders	1	7	48	0.45	Diesel
2670	Pump Plant ^b	Air Compressors	1	3	115	0.48	Diesel
2670	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
2670	Pump Plant ^b	Graders	1	1	350	0.41	Diesel
2670	Pump Plant ^b	Excavators	1	1	523	0.38	Diesel
2670	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
2670	Pump Plant ^b	Crawler Tractors	1	4	242	0.43	Diesel
2670	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
2670	Pump Plant ^b	Off-Highway Trucks	1	3	650	0.38	Diesel
2670	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
2670	Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
2670	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
2670	Pump Plant ^b	Gas Pump	1	5	2	0.69	Gasoline
2670	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
2675	Pump Plant ^b	Welders	1	6	48	0.45	Diesel
2675	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
2675	Pump Plant ^b	Graders	1	0	350	0.41	Diesel
2675	Pump Plant ^b	Excavators	1	0	523	0.38	Diesel
2675	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
2675	Pump Plant ^b	Crawler Tractors	1	3	242	0.43	Diesel
2675	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
2675	Pump Plant ^b	Off-Highway Trucks	1	2	650	0.38	Diesel
2675	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
2675	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
2675	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
2675	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
2680	Pump Plant ^b	Welders	2	6	48	0.45	Diesel
2680	Pump Plant ^b	Air Compressors	1	1	500	0.48	Diesel
2680	Pump Plant ^b	Crawler Tractors	1	2	242	0.43	Diesel
2680	Pump Plant ^b	Pumps	1	1	210	0.74	Diesel
2680	Pump Plant ^b	Cranes	1	3	240	0.29	Diesel
2680	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
2680	Pump Plant ^b	Generator Sets	1	1	143	0.74	Diesel
2680	Pump Plant ^b	Generator Sets	1	7	107	0.74	Diesel
2680	Pump Plant ^b	Other Construction Equipment	1	2	92	0.42	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
2685	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
2685	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	101	0.37	Diesel
2685	Pump Plant ^b	Off-Highway Trucks	1	1	489	0.38	Diesel
2685	Pump Plant ^b	Rubber Tired Loaders	1	1	501	0.36	Diesel
2685	Pump Plant ^b	Rollers	1	1	150	0.38	Diesel
2685	Pump Plant ^b	Cranes	1	8	275	0.29	Diesel
2685	Pump Plant ^b	Pumps	1	1	60	0.74	Diesel
3605	Pump Plant ^b	Crawler Tractors	1	0	24	0.43	Diesel
3605	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
3605	Pump Plant ^b	Excavators	1	13	523	0.38	Diesel
3605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
3605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	13	101	0.37	Diesel
3605	Pump Plant ^b	Off-Highway Trucks	3	17	375	0.38	Diesel
3605	Pump Plant ^b	Rubber Tired Loaders	1	13	211	0.36	Diesel
3605	Pump Plant ^b	Rubber Tired Loaders	1	13	160	0.36	Diesel
3605	Pump Plant ^b	Crawler Tractors	1	4	70	0.43	Diesel
3605	Pump Plant ^b	Crawler Tractors	1	15	145	0.43	Diesel
3605	Pump Plant ^b	Rubber Tired Loaders	1	2	145	0.36	Diesel
3605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	80	0.37	Diesel
3605	Pump Plant ^b	Cranes	1	13	275	0.29	Diesel
3605	Pump Plant ^b	Excavators	1	13	315	0.38	Diesel
3605	Pump Plant ^b	Pumps	1	13	60	0.74	Diesel
3605	Pump Plant ^b	Gas Pump	1	16	2	0.69	Gasoline
3610	Pump Plant ^b	Pavers	1	1	224	0.42	Diesel
3610	Pump Plant ^b	Rollers	1	1	110	0.38	Diesel
3610	Pump Plant ^b	Rollers	1	1	131	0.38	Diesel
3610	Pump Plant ^b	Crawler Tractors	1	5	24	0.43	Diesel
3610	Pump Plant ^b	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
3610	Pump Plant ^b	Graders	1	1	158	0.41	Diesel
3610	Pump Plant ^b	Graders	2	10	215	0.41	Diesel
3610	Pump Plant ^b	Excavators	1	1	128	0.38	Diesel
3610	Pump Plant ^b	Excavators	1	17	523	0.38	Diesel
3610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
3610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	101	0.37	Diesel
3610	Pump Plant ^b	Off-Highway Trucks	1	7	375	0.38	Diesel
3610	Pump Plant ^b	Off-Highway Trucks	3	17	489	0.38	Diesel
3610	Pump Plant ^b	Rollers	1	2	240	0.38	Diesel
3610	Pump Plant ^b	Rollers	1	17	315	0.38	Diesel
3610	Pump Plant ^b	Rubber Tired Loaders	1	5	197	0.36	Diesel
3610	Pump Plant ^b	Rubber Tired Loaders	1	1	211	0.36	Diesel
3610	Pump Plant ^b	Rubber Tired Loaders	1	10	250	0.36	Diesel
3610	Pump Plant ^b	Rollers	1	4	150	0.38	Diesel
3610	Pump Plant ^b	Crawler Tractors	1	4	70	0.43	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
3610	Pump Plant ^b	Crawler Tractors	3	20	145	0.43	Diesel
3610	Pump Plant ^b	Off-Highway Trucks	7	20	650	0.38	Diesel
3610	Pump Plant ^b	Plate Compactors	1	4	8	0.43	Diesel
3610	Pump Plant ^b	Pavers	1	1	92	0.42	Diesel
3610	Pump Plant ^b	Excavators	1	4	384	0.38	Diesel
3610	Pump Plant ^b	Generator Sets	5	18	12	0.74	Diesel
3610	Pump Plant ^b	Pumps	1	5	16	0.74	Diesel
3615	Pump Plant ^b	Tractors/Loaders/Backhoes	2	19	101	0.37	Diesel
3615	Pump Plant ^b	Bore/Drill Rigs	2	19	210	0.50	Diesel
3615	Pump Plant ^b	Cranes	2	19	160	0.29	Diesel
3620	Pump Plant ^b	Graders	1	2	158	0.41	Diesel
3620	Pump Plant ^b	Rollers	1	8	150	0.38	Diesel
3620	Pump Plant ^b	Crawler Tractors	1	8	70	0.43	Diesel
3620	Pump Plant ^b	Crawler Tractors	1	8	145	0.43	Diesel
3620	Pump Plant ^b	Crawler Tractors	1	8	310	0.43	Diesel
3620	Pump Plant ^b	Off-Highway Trucks	7	9	452	0.38	Diesel
3620	Pump Plant ^b	Excavators	1	8	384	0.38	Diesel
3620	Pump Plant ^b	Bore/Drill Rigs	1	10	206	0.50	Diesel
3630	Pump Plant ^b	Crawler Tractors	1	8	242	0.43	Diesel
3630	Pump Plant ^b	Cranes	2	5	240	0.29	Diesel
3630	Pump Plant ^b	Cranes	2	8	335	0.29	Diesel
3630	Pump Plant ^b	Other Construction Equipment	1	8	92	0.42	Diesel
3635	Pump Plant ^b	Welders	2	8	48	0.45	Diesel
3635	Pump Plant ^b	Air Compressors	1	3	500	0.48	Diesel
3635	Pump Plant ^b	Pumps	1	1	210	0.74	Diesel
3635	Pump Plant ^b	Cranes	1	5	100	0.29	Diesel
3635	Pump Plant ^b	Cranes	1	3	375	0.29	Diesel
3635	Pump Plant ^b	Generator Sets	1	3	143	0.74	Diesel
3635	Pump Plant ^b	Generator Sets	1	10	107	0.74	Diesel
3640	Pump Plant ^b	Welders	1	4	48	0.45	Diesel
3640	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
3645	Pump Plant ^b	Welders	1	0	48	0.45	Diesel
3645	Pump Plant ^b	Air Compressors	1	6	80	0.48	Diesel
3645	Pump Plant ^b	Cranes	1	6	160	0.29	Diesel
3645	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
3645	Pump Plant ^b	Cranes	1	10	66	0.29	Diesel
3650	Pump Plant ^b	Welders	1	1	48	0.45	Diesel
3650	Pump Plant ^b	Air Compressors	1	1	115	0.48	Diesel
3650	Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
3650	Pump Plant ^b	Cranes	1	2	275	0.29	Diesel
3650	Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
3650	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
3655	Pump Plant ^b	Air Compressors	2	6	80	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
3655	Pump Plant ^b	Cranes	2	6	160	0.29	Diesel
3655	Pump Plant ^b	Cranes	2	6	66	0.29	Diesel
3665	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
3670	Pump Plant ^b	Welders	1	7	48	0.45	Diesel
3670	Pump Plant ^b	Air Compressors	1	3	115	0.48	Diesel
3670	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
3670	Pump Plant ^b	Graders	1	1	350	0.41	Diesel
3670	Pump Plant ^b	Excavators	1	1	523	0.38	Diesel
3670	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
3670	Pump Plant ^b	Crawler Tractors	1	4	242	0.43	Diesel
3670	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
3670	Pump Plant ^b	Off-Highway Trucks	1	3	650	0.38	Diesel
3670	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
3670	Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
3670	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
3670	Pump Plant ^b	Gas Pump	1	5	2	0.69	Gasoline
3670	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
3675	Pump Plant ^b	Welders	1	6	48	0.45	Diesel
3675	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
3675	Pump Plant ^b	Graders	1	0	350	0.41	Diesel
3675	Pump Plant ^b	Excavators	1	0	523	0.38	Diesel
3675	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
3675	Pump Plant ^b	Crawler Tractors	1	3	242	0.43	Diesel
3675	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
3675	Pump Plant ^b	Off-Highway Trucks	1	2	650	0.38	Diesel
3675	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
3675	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
3675	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
3675	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
3680	Pump Plant ^b	Welders	2	6	48	0.45	Diesel
3680	Pump Plant ^b	Air Compressors	1	1	500	0.48	Diesel
3680	Pump Plant ^b	Crawler Tractors	1	1	242	0.43	Diesel
3680	Pump Plant ^b	Pumps	1	1	210	0.74	Diesel
3680	Pump Plant ^b	Cranes	1	3	240	0.29	Diesel
3680	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
3680	Pump Plant ^b	Generator Sets	1	1	143	0.74	Diesel
3680	Pump Plant ^b	Generator Sets	1	6	107	0.74	Diesel
3680	Pump Plant ^b	Other Construction Equipment	1	1	92	0.42	Diesel
3685	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
3685	Pump Plant ^b	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
3685	Pump Plant ^b	Off-Highway Trucks	1	1	489	0.38	Diesel
3685	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
3685	Pump Plant ^b	Rollers	1	0	150	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
3685	Pump Plant ^b	Cranes	1	6	275	0.29	Diesel
3685	Pump Plant ^b	Pumps	1	0	60	0.74	Diesel
5605	Pump Plant ^b	Crawler Tractors	1	0	24	0.43	Diesel
5605	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
5605	Pump Plant ^b	Excavators	1	10	523	0.38	Diesel
5605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	87	0.37	Diesel
5605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	10	101	0.37	Diesel
5605	Pump Plant ^b	Off-Highway Trucks	3	14	375	0.38	Diesel
5605	Pump Plant ^b	Rubber Tired Loaders	1	10	211	0.36	Diesel
5605	Pump Plant ^b	Rubber Tired Loaders	1	10	160	0.36	Diesel
5605	Pump Plant ^b	Crawler Tractors	1	3	70	0.43	Diesel
5605	Pump Plant ^b	Crawler Tractors	1	12	145	0.43	Diesel
5605	Pump Plant ^b	Rubber Tired Loaders	1	2	145	0.36	Diesel
5605	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	80	0.37	Diesel
5605	Pump Plant ^b	Cranes	1	10	275	0.29	Diesel
5605	Pump Plant ^b	Excavators	1	10	315	0.38	Diesel
5605	Pump Plant ^b	Pumps	1	10	60	0.74	Diesel
5605	Pump Plant ^b	Gas Pump	1	13	2	0.69	Gasoline
5610	Pump Plant ^b	Pavers	1	1	224	0.42	Diesel
5610	Pump Plant ^b	Rollers	1	1	110	0.38	Diesel
5610	Pump Plant ^b	Rollers	1	1	131	0.38	Diesel
5610	Pump Plant ^b	Crawler Tractors	1	5	24	0.43	Diesel
5610	Pump Plant ^b	Crushing/Proc. Equipment	1	1	85	0.78	Diesel
5610	Pump Plant ^b	Graders	1	1	158	0.41	Diesel
5610	Pump Plant ^b	Graders	1	17	215	0.41	Diesel
5610	Pump Plant ^b	Excavators	1	1	128	0.38	Diesel
5610	Pump Plant ^b	Excavators	1	14	523	0.38	Diesel
5610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	3	87	0.37	Diesel
5610	Pump Plant ^b	Tractors/Loaders/Backhoes	1	2	101	0.37	Diesel
5610	Pump Plant ^b	Off-Highway Trucks	1	7	375	0.38	Diesel
5610	Pump Plant ^b	Off-Highway Trucks	3	14	489	0.38	Diesel
5610	Pump Plant ^b	Rollers	1	1	240	0.38	Diesel
5610	Pump Plant ^b	Rollers	1	14	315	0.38	Diesel
5610	Pump Plant ^b	Rubber Tired Loaders	1	5	197	0.36	Diesel
5610	Pump Plant ^b	Rubber Tired Loaders	1	1	211	0.36	Diesel
5610	Pump Plant ^b	Rubber Tired Loaders	1	8	250	0.36	Diesel
5610	Pump Plant ^b	Rollers	1	4	150	0.38	Diesel
5610	Pump Plant ^b	Crawler Tractors	1	4	70	0.43	Diesel
5610	Pump Plant ^b	Crawler Tractors	3	16	145	0.43	Diesel
5610	Pump Plant ^b	Off-Highway Trucks	6	19	650	0.38	Diesel
5610	Pump Plant ^b	Plate Compactors	1	4	8	0.43	Diesel
5610	Pump Plant ^b	Pavers	1	1	92	0.42	Diesel
5610	Pump Plant ^b	Excavators	1	3	384	0.38	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
5610	Pump Plant ^b	Generator Sets	4	18	12	0.74	Diesel
5610	Pump Plant ^b	Pumps	1	4	16	0.74	Diesel
5615	Pump Plant ^b	Tractors/Loaders/Backhoes	2	16	101	0.37	Diesel
5615	Pump Plant ^b	Bore/Drill Rigs	2	16	210	0.50	Diesel
5615	Pump Plant ^b	Cranes	2	16	160	0.29	Diesel
5620	Pump Plant ^b	Graders	1	2	158	0.41	Diesel
5620	Pump Plant ^b	Rollers	1	9	150	0.38	Diesel
5620	Pump Plant ^b	Crawler Tractors	1	9	70	0.43	Diesel
5620	Pump Plant ^b	Crawler Tractors	1	9	145	0.43	Diesel
5620	Pump Plant ^b	Crawler Tractors	1	9	310	0.43	Diesel
5620	Pump Plant ^b	Off-Highway Trucks	7	10	452	0.38	Diesel
5620	Pump Plant ^b	Excavators	1	9	384	0.38	Diesel
5620	Pump Plant ^b	Bore/Drill Rigs	1	10	206	0.50	Diesel
5630	Pump Plant ^b	Crawler Tractors	1	8	242	0.43	Diesel
5630	Pump Plant ^b	Cranes	2	5	240	0.29	Diesel
5630	Pump Plant ^b	Cranes	2	8	335	0.29	Diesel
5630	Pump Plant ^b	Other Construction Equipment	1	8	92	0.42	Diesel
5635	Pump Plant ^b	Welders	2	8	48	0.45	Diesel
5635	Pump Plant ^b	Air Compressors	1	3	500	0.48	Diesel
5635	Pump Plant ^b	Pumps	1	1	210	0.74	Diesel
5635	Pump Plant ^b	Cranes	1	5	100	0.29	Diesel
5635	Pump Plant ^b	Cranes	1	3	375	0.29	Diesel
5635	Pump Plant ^b	Generator Sets	1	3	143	0.74	Diesel
5635	Pump Plant ^b	Generator Sets	1	10	107	0.74	Diesel
5640	Pump Plant ^b	Welders	1	4	48	0.45	Diesel
5640	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
5645	Pump Plant ^b	Welders	1	0	48	0.45	Diesel
5645	Pump Plant ^b	Air Compressors	1	7	80	0.48	Diesel
5645	Pump Plant ^b	Cranes	1	7	160	0.29	Diesel
5645	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
5645	Pump Plant ^b	Cranes	2	6	66	0.29	Diesel
5650	Pump Plant ^b	Welders	1	1	48	0.45	Diesel
5650	Pump Plant ^b	Air Compressors	1	1	115	0.48	Diesel
5650	Pump Plant ^b	Cranes	1	2	240	0.29	Diesel
5650	Pump Plant ^b	Cranes	1	2	275	0.29	Diesel
5650	Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
5650	Pump Plant ^b	Cranes	1	0	335	0.29	Diesel
5655	Pump Plant ^b	Air Compressors	2	6	80	0.48	Diesel
5655	Pump Plant ^b	Cranes	2	6	160	0.29	Diesel
5655	Pump Plant ^b	Cranes	2	6	66	0.29	Diesel
5665	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
5670	Pump Plant ^b	Welders	1	7	48	0.45	Diesel
5670	Pump Plant ^b	Air Compressors	1	3	115	0.48	Diesel

Phase	Feature	Equipment Name	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
5670	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
5670	Pump Plant ^b	Graders	1	1	350	0.41	Diesel
5670	Pump Plant ^b	Excavators	1	1	523	0.38	Diesel
5670	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
5670	Pump Plant ^b	Crawler Tractors	1	4	242	0.43	Diesel
5670	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
5670	Pump Plant ^b	Off-Highway Trucks	1	3	650	0.38	Diesel
5670	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
5670	Pump Plant ^b	Cranes	1	5	335	0.29	Diesel
5670	Pump Plant ^b	Cranes	1	3	335	0.29	Diesel
5670	Pump Plant ^b	Gas Pump	1	5	2	0.69	Gasoline
5670	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
5675	Pump Plant ^b	Welders	1	6	48	0.45	Diesel
5675	Pump Plant ^b	Graders	1	0	215	0.41	Diesel
5675	Pump Plant ^b	Graders	1	0	350	0.41	Diesel
5675	Pump Plant ^b	Excavators	1	0	523	0.38	Diesel
5675	Pump Plant ^b	Rollers	1	0	240	0.38	Diesel
5675	Pump Plant ^b	Crawler Tractors	1	3	242	0.43	Diesel
5675	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
5675	Pump Plant ^b	Off-Highway Trucks	1	2	650	0.38	Diesel
5675	Pump Plant ^b	Cranes	1	4	240	0.29	Diesel
5675	Pump Plant ^b	Cranes	2	9	335	0.29	Diesel
5675	Pump Plant ^b	Cranes	1	6	335	0.29	Diesel
5675	Pump Plant ^b	Off-Highway Trucks	4	10	375	0.38	Diesel
5675	Pump Plant ^b	Bore/Drill Rigs	1	2	206	0.50	Diesel
5680	Pump Plant ^b	Welders	1	6	48	0.45	Diesel
5680	Pump Plant ^b	Air Compressors	1	1	500	0.48	Diesel
5680	Pump Plant ^b	Crawler Tractors	1	1	242	0.43	Diesel
5680	Pump Plant ^b	Pumps	1	1	210	0.74	Diesel
5680	Pump Plant ^b	Cranes	1	1	240	0.29	Diesel
5680	Pump Plant ^b	Cranes	1	1	335	0.29	Diesel
5680	Pump Plant ^b	Generator Sets	1	1	143	0.74	Diesel
5680	Pump Plant ^b	Generator Sets	1	3	107	0.74	Diesel
5680	Pump Plant ^b	Other Construction Equipment	1	1	92	0.42	Diesel
5685	Pump Plant ^b	Graders	1	1	215	0.41	Diesel
5685	Pump Plant ^b	Tractors/Loaders/Backhoes	1	1	101	0.37	Diesel
5685	Pump Plant ^b	Off-Highway Trucks	1	1	489	0.38	Diesel
5685	Pump Plant ^b	Rubber Tired Loaders	1	0	501	0.36	Diesel
5685	Pump Plant ^b	Rollers	1	0	150	0.38	Diesel
5685	Pump Plant ^b	Cranes	1	6	275	0.29	Diesel
5685	Pump Plant ^b	Pumps	1	0	60	0.74	Diesel

^a Geotechnical explorations would only be conducted for Alternative 4.

^b Feature would only be constructed under certain alternatives.

1 **Table 22B-3. Marine Inventory**

Sch Act	Feature	EQ Desc	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
8010	Clifton Court Forebay	Boat, 16', 100 hp	1	5	100	0.45	Diesel
8012	Clifton Court Forebay	Boat, 16', 100 hp	1	5	100	0.45	Diesel
8015	Clifton Court Forebay	Boat, 16', 100 hp	1	4	100	0.45	Diesel
8025	Clifton Court Forebay	Boat, 16', 100 hp	1	8	100	0.45	Diesel
8030	Clifton Court Forebay	Boat, 16', 100 hp	1	11	100	0.45	Diesel
8040	Clifton Court Forebay	Boat, 16', 100 hp	1	6	100	0.45	Diesel
8045	Clifton Court Forebay	Boat, 16', 100 hp	1	5	100	0.45	Diesel
8090	Clifton Court Forebay	Boat, 16', 100 hp	1	8	100	0.45	Diesel
8090	Clifton Court Forebay	Boat, Push, 48', 400 hp	1	8	400	0.45	Diesel
8092	Clifton Court Forebay	Boat, 16', 100 hp	1	8	100	0.45	Diesel
8092	Clifton Court Forebay	Boat, Push, 48', 400 hp	1	8	400	0.45	Diesel
SegHauling	Segment Hauling ^a	Tugboat, 1000/75 HP	-	36/39	1000/75	0.5/0.31	Diesel
SegHauling	Segment Hauling ^a	Tugboat, 1000/75 HP	-	11/14	1000/75	0.5/0.31	Diesel
SegHauling	Segment Hauling ^a	Tugboat, 1000/75 HP	-	25/28	1000/75	0.5/0.31	Diesel
SegHauling	Segment Hauling ^a	Tugboat, 1000/75 HP	-	6/9	1000/75	0.5/0.31	Diesel
Overwater	Geotechnical Exploration ^a	Passenger Speed Boat	1	1	1000	0.45	Diesel
201	Intakes	Boat, 16', 100 hp	2	8	100	0.45	Diesel
207	Intakes	Boat, 16', 100 hp	2	16	100	0.45	Diesel
207	Intakes	Boat, Push, 48', 400 hp	1	3	400	0.45	Diesel
229	Intakes	Boat, 16', 100 hp	1	5	100	0.45	Diesel
229	Intakes	Boat, Push, 48', 400 hp	1	8	400	0.45	Diesel
301	Intakes	Boat, 16', 100 hp	2	8	100	0.45	Diesel
307	Intakes	Boat, 16', 100 hp	2	15	100	0.45	Diesel
307	Intakes	Boat, Push, 48', 400 hp	1	2	400	0.45	Diesel
329	Intakes	Boat, 16', 100 hp	1	6	100	0.45	Diesel
329	Intakes	Boat, Push, 48', 400 hp	1	6	400	0.45	Diesel
501	Intakes	Boat, 16', 100 hp	2	8	100	0.45	Diesel
507	Intakes	Boat, 16', 100 hp	2	11	100	0.45	Diesel
507	Intakes	Boat, Push, 48', 400 hp	1	3	400	0.45	Diesel
529	Intakes	Boat, 16', 100 hp	1	4	100	0.45	Diesel
529	Intakes	Boat, Push, 48', 400 hp	1	8	400	0.45	Diesel
7520	Reach 7/Combined Pump Plant	Boat, 16', 100 hp	5	8	100	0.45	Diesel
7522	Reach 7/Combined Pump Plant	Boat, 16', 100 hp	2	7	100	0.45	Diesel
2050	Reach 6	Boat, 16', 100 hp	1	4.2	100	0.45	Diesel
9008	Dredge ^b	M10xx012 Boat, 16', 100 hp	1	20	100	0.45	Diesel

^a Geotechnical explorations and segment hauling would only be conducted for Alternative 4.^b Feature would only be constructed under certain alternatives.

2

3 **Table 22B-4. Marine Emission Factors (grams per horsepower-hour)**

Boat	ROG	NO _x	CO	PM10	PM2.5	SO _x	CO ₂	CH ₄	N ₂ O
Model Year 2000 100 HP Engine	0.92	7.90	2.96	0.76	0.74	1.74	925.31	0.09	0.03
Model Year 2000 400 HP Engine	0.63	7.90	2.29	0.41	0.40	1.74	925.31	0.09	0.03
Model Year 2000 1000 HP Main Engine	0.55	7.30	2.09	0.34	0.33	1.74	925.31	0.09	0.03
Model Year 2000 1000 HP Auxillary Engine	0.58	7.13	3.71	0.51	0.49	1.74	925.31	0.09	0.03
Model Year 2010 100 HP Engine	0.92	5.75	4.33	0.25	0.25	1.74	925.31	0.09	0.03
Model Year 2010 400 HP Engine	0.72	5.85	4.66	0.20	0.19	1.74	925.31	0.09	0.03
Model Year 2000 1000 HP Main Engine	0.55	5.52	3.96	0.19	0.18	1.74	925.31	0.09	0.03
Model Year 2000 1000 HP Auxillary Engine	0.62	5.40	3.86	0.17	0.17	1.74	925.31	0.09	0.03

Source: California Air Resources Board. 2012. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California. February.

1 **Table 22B-5. Locomotive Inventory**

Sch Act	Feature	Eq Desc	#/ day	Hrs/ day/ Eq	HP	LF	Fuel type
1280	Reach 7/Combined Pump Plant	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1880	Reach 7/Combined Pump Plant	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1890	Reach 7/Combined Pump Plant	8RAL025 25 T DSL LOCOMOTIVE	2	22	150	0.8	Diesel
2110	Reach 7/Combined Pump Plant	8RAL025 25 T DSL LOCOMOTIVE	2	22	150	0.8	Diesel
1280	Reach 4	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1880	Reach 4	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1890	Reach 4	8RAL025 25 T DSL LOCOMOTIVE	3	19	150	0.8	Diesel
2110	Reach 4	8RAL025 25 T DSL LOCOMOTIVE	3	19	150	0.8	Diesel
1280	Reach 5	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1880	Reach 5	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1890	Reach 5	8RAL025 25 T DSL LOCOMOTIVE	4	21	150	0.8	Diesel
2110	Reach 5	8RAL025 25 T DSL LOCOMOTIVE	4	21	150	0.8	Diesel
1280	Reach 6	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1880	Reach 6	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1890	Reach 6	8RAL025 25 T DSL LOCOMOTIVE	2	23	150	0.8	Diesel
2110	Reach 6	8RAL025 25 T DSL LOCOMOTIVE	2	22	150	0.8	Diesel
1280	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1880	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1890	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	3	22	150	0.8	Diesel
1900	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	4	18	150	0.8	Diesel
1910	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	3	17	150	0.8	Diesel
2110	Reaches 123	8RAL025 25 T DSL LOCOMOTIVE	4	22	150	0.8	Diesel

2

3 **Table 22B-6. Locomotive Emission Factors (grams per horsepower hour)**

Tier	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	CO ₂	CH ₄	N ₂ O
Tier 1	1.05	6.90	3.70	0.40	0.39	0.00	530	0.03	0.01
Tier 4	0.15	0.30	3.70	0.01	0.01	0.00	531	0.03	0.01

Sources: California Air Resources Board. 2010. Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling: Compression-Ignition. NR-009d.

4

5 **Table 22B-7. Routine Vehicle Inventory**

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
8003	Clifton Court Forebay	Pickup, 1/2T, 4wd	34	40	Gasoline
8003	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	12	104	Gasoline
8004	Clifton Court Forebay	Boom Truck, 8 Tn Boom	1	0	Diesel
8004	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	6	Gasoline
8004	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	0	Gasoline
8004	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	1	Gasoline
8004	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	1	Gasoline
8004	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	1	Diesel
8004	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	7	Diesel
8004	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	9	Diesel
8005	Clifton Court Forebay	Boom Truck, 8 Tn Boom	1	11	Diesel
8005	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	23	Gasoline
8005	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	7	Gasoline
8005	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	1	Gasoline
8005	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	2	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
8005	Clifton Court Forebay	Transit Mix Truck, 10cy	1	16	Diesel
8005	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	5	Diesel
8005	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	8	Gasoline
8006	Clifton Court Forebay	Pickup, 1/2T, 2wd	2	25	Gasoline
8007	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	2	97	Gasoline
8010	Clifton Court Forebay	Mechanics Truck	1	34	Diesel
8010	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	65	Gasoline
8010	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	15	Gasoline
8010	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	8	Gasoline
8010	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	25	Diesel
8010	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	96	Diesel
8010	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	28	Gasoline
8010	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	8	Diesel
8012	Clifton Court Forebay	Mechanics Truck	1	34	Diesel
8012	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	65	Gasoline
8012	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	15	Gasoline
8012	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	7	Gasoline
8012	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	32	Diesel
8012	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	94	Diesel
8012	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	27	Gasoline
8012	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	12	Diesel
8015	Clifton Court Forebay	Mechanics Truck	1	30	Diesel
8015	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	71	Gasoline
8015	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	13	Gasoline
8015	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	7	Gasoline
8015	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	9	Diesel
8015	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	122	Diesel
8015	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	24	Gasoline
8015	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	1	Diesel
8025	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	18	Gasoline
8025	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	1	Gasoline
8025	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	14	Diesel
8025	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	11	Gasoline
8025	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	10	Diesel
8030	Clifton Court Forebay	Mechanics Truck	1	38	Diesel
8030	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	99	Gasoline
8030	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	31	Gasoline
8030	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	8	Gasoline
8030	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	16	Diesel
8030	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	105	Diesel
8030	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	60	Gasoline
8030	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	2	Diesel
8040	Clifton Court Forebay	Mechanics Truck	1	46	Diesel
8040	Clifton Court Forebay	Pickup, 1/2T, 2wd	2	57	Gasoline
8040	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	21	Gasoline
8040	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	10	Gasoline
8040	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	18	Diesel
8040	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	128	Diesel
8040	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	37	Gasoline
8040	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	2	Diesel
8045	Clifton Court Forebay	Mechanics Truck	1	36	Diesel
8045	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	92	Gasoline
8045	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	17	Gasoline
8045	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	7	Gasoline
8045	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	15	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
8045	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	100	Diesel
8045	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	29	Gasoline
8045	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	2	Diesel
8050	Clifton Court Forebay	Boom Truck, 8 Tn Boom	1	0	Diesel
8050	Clifton Court Forebay	Pickup, 1/2T, 2wd	2	25	Gasoline
8050	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	0	Gasoline
8050	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
8050	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	96	Diesel
8050	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	44	Diesel
8050	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	18	Diesel
8060	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	44	Gasoline
8060	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	1	Gasoline
8060	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
8060	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	78	Diesel
8060	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	16	Diesel
8060	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	20	Diesel
8071	Clifton Court Forebay	Pickup, 3/4T, 2wd	2	47	Gasoline
8071	Clifton Court Forebay	Transit Mix Truck, 10cy	1	19	Diesel
8071	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	2	89	Diesel
8071	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	35	Diesel
8073	Clifton Court Forebay	Transit Mix Truck, 10cy	2	57	Diesel
8073	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	2	Diesel
8073	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	236	Gasoline
8073	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	9	Diesel
8075	Clifton Court Forebay	Pickup, 3/4T, 4wd	6	42	Gasoline
8077	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	92	Gasoline
8077	Clifton Court Forebay	Transit Mix Truck, 10cy	1	17	Diesel
8077	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	175	Diesel
8077	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	37	Diesel
8079	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	85	Gasoline
8079	Clifton Court Forebay	Transit Mix Truck, 10cy	1	98	Diesel
8079	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	2	Diesel
8079	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	205	Gasoline
8081	Clifton Court Forebay	Pickup, 3/4T, 4wd	6	44	Gasoline
8090	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	1	Gasoline
8090	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	15	Gasoline
8090	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	0	Gasoline
8090	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	1	Gasoline
8090	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	3	Diesel
8090	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	29	Diesel
8090	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	21	Diesel
8090	Clifton Court Forebay	Transit Mix Truck, 10cy	1	23	Diesel
8092	Clifton Court Forebay	Pickup, 1/2T, 2wd	1	5	Gasoline
8092	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	15	Gasoline
8092	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	0	Gasoline
8092	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8092	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	17	Diesel
8092	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	54	Diesel
8092	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	24	Diesel
8092	Clifton Court Forebay	Transit Mix Truck, 10cy	1	22	Diesel
8092	Clifton Court Forebay	Boom Truck, 8 Tn Boom	1	12	Diesel
8096	Clifton Court Forebay	Pickup, 3/4T, 4wd	3	79	Gasoline
8096	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	3	220	Diesel
8096	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	3	220	Diesel
8101	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	8	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
8101	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	22	Diesel
8103	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8103	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	5	Diesel
8103	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	61	Gasoline
8103	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	10	Diesel
8103	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	6	Diesel
8111	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	5	Gasoline
8111	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	15	Diesel
8113	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8113	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	1	Diesel
8113	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	39	Gasoline
8113	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	7	Diesel
8113	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	6	Diesel
8121	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	8	Gasoline
8121	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	22	Diesel
8123	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8123	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	4	Diesel
8123	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	59	Gasoline
8123	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	10	Diesel
8123	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	6	Diesel
8131	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	5	Gasoline
8131	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	15	Diesel
8133	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8133	Clifton Court Forebay	Transit Mix Truck, 10cy	1	9	Diesel
8133	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	1	Diesel
8133	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	34	Gasoline
8133	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	6	Diesel
8133	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	5	Diesel
8140	Clifton Court Forebay	Pickup, 3/4T, 2wd	1	8	Gasoline
8140	Clifton Court Forebay	Transit Mix Truck, 10cy	1	13	Diesel
8140	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	22	Diesel
8141	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	4	Gasoline
8141	Clifton Court Forebay	Transit Mix Truck, 10cy	1	17	Diesel
8141	Clifton Court Forebay	Truck, Flatbed, 10T, Hwy	1	2	Diesel
8141	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	28	Gasoline
8141	Clifton Court Forebay	Truck, Tractor, 75000#, 6 x 4	1	10	Diesel
8141	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	6	Diesel
8145	Clifton Court Forebay	Pickup, 1/2T, 4wd	1	2	Gasoline
8145	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	5	Diesel
8146	Clifton Court Forebay	Pickup, 3/4T, 4wd	1	1	Gasoline
8146	Clifton Court Forebay	Transit Mix Truck, 10cy	1	48	Diesel
8146	Clifton Court Forebay	Truck, End Dump, 10-13cy, Hwy	1	39	Diesel
8146	Clifton Court Forebay	Truck, Flatbed, 2T, Hwy	1	37	Gasoline
8146	Clifton Court Forebay	Truck, Water, 4 mgal, Hwy	1	8	Diesel
AccessRoad	Geotechnical Explorations ^a	Water Truck	1	40	Diesel
Onland	Geotechnical Explorations ^a	Backhoe Transport Truck	1	28	Diesel
Onland	Geotechnical Explorations ^a	CPT Rig Transport Truck	1	56	Diesel
Onland	Geotechnical Explorations ^a	Drill Rig Transport Truck	1	56	Diesel
Onland	Geotechnical Explorations ^a	Drill Support Truck	5	10	Diesel
Overwater	Geotechnical Explorations ^a	CPT Rig Transport Truck	1	140	Diesel
Overwater	Geotechnical Explorations ^a	Drill Rig Transport Truck	1	140	Diesel
3	Intakes	Pickup, 3/4T, 2wd	57	40	Gasoline
3	Intakes	Truck, Flatbed, 2T, Hwy	3	109	Gasoline
4	Intakes	Boom Truck, 8 Tn Boom	2	38	Diesel
4	Intakes	Pickup, 1/2T, 2wd	4	38	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
4	Intakes	Pickup, 1/2T, 4wd	1	45	Gasoline
4	Intakes	Pickup, 3/4T, 2wd	1	1	Gasoline
4	Intakes	Pickup, 3/4T, 4wd	1	2	Gasoline
4	Intakes	Transit Mix Truck, 10cy	1	12	Diesel
4	Intakes	Truck, End Dump, 10-13cy, Hwy	1	32	Diesel
4	Intakes	Truck, Flatbed, 2T, Hwy	1	6	Gasoline
4	Intakes	Truck, Water, 4 mgal, Hwy	1	38	Diesel
6	Intakes	Boom Truck, 8 Tn Boom	1	13	Diesel
6	Intakes	Pickup, 1/2T, 2wd	1	26	Gasoline
7	Intakes	Pickup, 1/2T, 2wd	1	30	Gasoline
203	Intakes	Boom Truck, 8 Tn Boom	1	32	Diesel
203	Intakes	Pickup, 1/2T, 2wd	1	32	Gasoline
203	Intakes	Pickup, 1/2T, 4wd	2	28	Gasoline
203	Intakes	Pickup, 3/4T, 2wd	1	2	Gasoline
203	Intakes	Pickup, 3/4T, 4wd	1	4	Gasoline
203	Intakes	Transit Mix Truck, 10cy	1	17	Diesel
203	Intakes	Truck, End Dump, 10-13cy, Hwy	1	38	Diesel
203	Intakes	Truck, Flatbed, 2T, Hwy	1	8	Gasoline
203	Intakes	Truck, Tractor, 75000#, 6 x 4	1	6	Diesel
203	Intakes	Truck, Water, 4 mgal, Hwy	1	44	Diesel
205	Intakes	Boom Truck, 8 Tn Boom	1	0	Diesel
205	Intakes	Mechanics Truck	1	38	Diesel
205	Intakes	Pickup, 1/2T, 2wd	1	31	Gasoline
205	Intakes	Pickup, 1/2T, 4wd	1	6	Gasoline
205	Intakes	Pickup, 3/4T, 4wd	1	4	Gasoline
205	Intakes	Truck, End Dump, 10-13cy, Hwy	1	11	Diesel
205	Intakes	Truck, End Dump, 16-20cy, Hwy	2	107	Diesel
205	Intakes	Truck, Flatbed, 10T, Hwy	1	107	Diesel
205	Intakes	Truck, Tractor, 75000#, 6 x 4	1	26	Diesel
205	Intakes	Truck, Water, 4 mgal, Hwy	4	124	Diesel
206	Intakes	Boom Truck, 8 Tn Boom	1	7	Diesel
206	Intakes	Pickup, 3/4T, 2wd	1	38	Gasoline
206	Intakes	Pickup, 3/4T, 4wd	1	2	Gasoline
206	Intakes	Transit Mix Truck, 10cy	2	36	Diesel
206	Intakes	Truck, End Dump, 10-13cy, Hwy	1	58	Diesel
206	Intakes	Truck, Tractor, 75000#, 6 x 4	1	54	Diesel
206	Intakes	Truck, Water, 4 mgal, Hwy	1	6	Diesel
209	Intakes	Pickup, 1/2T, 2wd	4	46	Gasoline
209	Intakes	Pickup, 1/2T, 4wd	1	22	Gasoline
209	Intakes	Pickup, 3/4T, 4wd	1	12	Gasoline
209	Intakes	Truck, End Dump, 10-13cy, Hwy	3	104	Diesel
209	Intakes	Truck, Flatbed, 2T, Hwy	1	115	Gasoline
209	Intakes	Truck, Water, 4 mgal, Hwy	2	106	Diesel
211	Intakes	Boom Truck, 8 Tn Boom	1	1	Diesel
211	Intakes	Mechanics Truck	2	80	Diesel
211	Intakes	Pickup, 1/2T, 2wd	1	2	Gasoline
211	Intakes	Pickup, 1/2T, 4wd	4	96	Gasoline
211	Intakes	Truck, Flatbed, 10T, Hwy	2	225	Diesel
211	Intakes	Truck, Tractor, 75000#, 6 x 4	1	16	Diesel
213	Intakes	Pickup, 1/2T, 4wd	3	38	Gasoline
213	Intakes	Truck, Water, 4 mgal, Hwy	1	8	Diesel
215	Intakes	Boom Truck, 8 Tn Boom	1	2	Diesel
215	Intakes	Pickup, 1/2T, 2wd	1	5	Gasoline
215	Intakes	Pickup, 1/2T, 4wd	1	71	Gasoline
215	Intakes	Transit Mix Truck, 10cy	1	26	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
215	Intakes	Truck, Flatbed, 10T, Hwy	1	99	Diesel
217	Intakes	Transit Mix Truck, 10cy	8	49	Diesel
219	Intakes	Pickup, 3/4T, 2wd	12	47	Gasoline
219	Intakes	Truck, Tractor, 75000#, 6 x 4	21	135	Diesel
221	Intakes	Transit Mix Truck, 10cy	1	42	Diesel
223	Intakes	Truck, Flatbed, 10T, Hwy	1	55	Diesel
223	Intakes	Truck, Tractor, 75000#, 6 x 4	1	53	Diesel
225	Intakes	Truck, Flatbed, 10T, Hwy	1	15	Diesel
227	Intakes	Boom Truck, 8 Tn Boom	1	35	Diesel
227	Intakes	Pickup, 1/2T, 2wd	2	32	Gasoline
227	Intakes	Pickup, 3/4T, 4wd	1	1	Gasoline
227	Intakes	Transit Mix Truck, 10cy	1	1	Diesel
227	Intakes	Truck, Flatbed, 10T, Hwy	1	131	Diesel
227	Intakes	Truck, Flatbed, 2T, Hwy	2	85	Gasoline
227	Intakes	Truck, Water, 4 mgal, Hwy	1	1	Diesel
229	Intakes	Boom Truck, 8 Tn Boom	1	20	Diesel
229	Intakes	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
229	Intakes	Truck, Flatbed, 10T, Hwy	1	56	Diesel
253	Intakes	Pickup, 3/4T, 4wd	3	37	Gasoline
253	Intakes	Truck, Water, 4 mgal, Hwy	3	101	Diesel
254	Intakes	Pickup, 3/4T, 4wd	1	28	Gasoline
254	Intakes	Truck, Water, 4 mgal, Hwy	1	48	Diesel
255	Intakes	Pickup, 3/4T, 2wd	1	50	Gasoline
255	Intakes	Transit Mix Truck, 10cy	1	25	Diesel
255	Intakes	Truck, End Dump, 16-20cy, Hwy	2	114	Diesel
255	Intakes	Truck, Tractor, 75000#, 6 x 4	1	139	Diesel
255	Intakes	Truck, Water, 4 mgal, Hwy	1	57	Diesel
257	Intakes	Transit Mix Truck, 10cy	2	47	Diesel
259	Intakes	Truck, Flatbed, 10T, Hwy	3	109	Diesel
259	Intakes	Truck, Tractor, 75000#, 6 x 4	1	131	Diesel
261	Intakes	Boom Truck, 8 Tn Boom	3	36	Diesel
261	Intakes	Pickup, 1/2T, 2wd	1	39	Gasoline
261	Intakes	Truck, End Dump, 10-13cy, Hwy	1	47	Diesel
261	Intakes	Truck, Flatbed, 10T, Hwy	1	95	Diesel
261	Intakes	Truck, Flatbed, 2T, Hwy	1	108	Gasoline
303	Intakes	Boom Truck, 8 Tn Boom	1	25	Diesel
303	Intakes	Pickup, 1/2T, 2wd	1	25	Gasoline
303	Intakes	Pickup, 1/2T, 4wd	1	44	Gasoline
303	Intakes	Pickup, 3/4T, 2wd	1	2	Gasoline
303	Intakes	Pickup, 3/4T, 4wd	1	3	Gasoline
303	Intakes	Transit Mix Truck, 10cy	1	13	Diesel
303	Intakes	Truck, End Dump, 10-13cy, Hwy	1	30	Diesel
303	Intakes	Truck, Flatbed, 2T, Hwy	1	6	Gasoline
303	Intakes	Truck, Tractor, 75000#, 6 x 4	1	5	Diesel
303	Intakes	Truck, Water, 4 mgal, Hwy	1	35	Diesel
305	Intakes	Boom Truck, 8 Tn Boom	1	0	Diesel
305	Intakes	Mechanics Truck	1	44	Diesel
305	Intakes	Pickup, 1/2T, 2wd	1	41	Gasoline
305	Intakes	Pickup, 1/2T, 4wd	1	7	Gasoline
305	Intakes	Pickup, 3/4T, 4wd	1	6	Gasoline
305	Intakes	Truck, End Dump, 10-13cy, Hwy	1	14	Diesel
305	Intakes	Truck, End Dump, 16-20cy, Hwy	2	123	Diesel
305	Intakes	Truck, Flatbed, 10T, Hwy	1	123	Diesel
305	Intakes	Truck, Tractor, 75000#, 6 x 4	1	35	Diesel
305	Intakes	Truck, Water, 4 mgal, Hwy	5	113	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
306	Intakes	Boom Truck, 8 Tn Boom	1	6	Diesel
306	Intakes	Pickup, 3/4T, 2wd	1	31	Gasoline
306	Intakes	Pickup, 3/4T, 4wd	1	2	Gasoline
306	Intakes	Transit Mix Truck, 10cy	2	28	Diesel
306	Intakes	Truck, End Dump, 10-13cy, Hwy	1	46	Diesel
306	Intakes	Truck, Tractor, 75000#, 6 x 4	1	44	Diesel
306	Intakes	Truck, Water, 4 mgal, Hwy	1	6	Diesel
309	Intakes	Boom Truck, 8 Tn Boom	2	46	Diesel
309	Intakes	Pickup, 1/2T, 2wd	6	46	Gasoline
309	Intakes	Pickup, 1/2T, 4wd	1	22	Gasoline
309	Intakes	Pickup, 3/4T, 4wd	1	16	Gasoline
309	Intakes	Transit Mix Truck, 10cy	1	22	Diesel
309	Intakes	Truck, End Dump, 10-13cy, Hwy	3	104	Diesel
309	Intakes	Truck, Flatbed, 2T, Hwy	1	125	Gasoline
309	Intakes	Truck, Water, 4 mgal, Hwy	2	108	Diesel
311	Intakes	Boom Truck, 8 Tn Boom	1	0	Diesel
311	Intakes	Mechanics Truck	1	81	Diesel
311	Intakes	Pickup, 1/2T, 2wd	1	1	Gasoline
311	Intakes	Pickup, 1/2T, 4wd	2	98	Gasoline
311	Intakes	Truck, Flatbed, 10T, Hwy	1	228	Diesel
311	Intakes	Truck, Tractor, 75000#, 6 x 4	1	7	Diesel
313	Intakes	Pickup, 1/2T, 4wd	2	29	Gasoline
313	Intakes	Truck, Water, 4 mgal, Hwy	1	4	Diesel
315	Intakes	Boom Truck, 8 Tn Boom	1	5	Diesel
315	Intakes	Pickup, 1/2T, 2wd	1	10	Gasoline
315	Intakes	Pickup, 1/2T, 4wd	1	85	Gasoline
315	Intakes	Transit Mix Truck, 10cy	1	30	Diesel
315	Intakes	Truck, Flatbed, 10T, Hwy	1	119	Diesel
317	Intakes	Transit Mix Truck, 10cy	7	43	Diesel
319	Intakes	Pickup, 3/4T, 2wd	8	48	Gasoline
319	Intakes	Truck, Tractor, 75000#, 6 x 4	14	136	Diesel
321	Intakes	Transit Mix Truck, 10cy	1	39	Diesel
323	Intakes	Truck, Flatbed, 10T, Hwy	1	56	Diesel
323	Intakes	Truck, Tractor, 75000#, 6 x 4	1	54	Diesel
325	Intakes	Truck, Flatbed, 10T, Hwy	1	24	Diesel
327	Intakes	Boom Truck, 8 Tn Boom	1	40	Diesel
327	Intakes	Pickup, 1/2T, 2wd	2	28	Gasoline
327	Intakes	Pickup, 3/4T, 4wd	1	1	Gasoline
327	Intakes	Transit Mix Truck, 10cy	1	1	Diesel
327	Intakes	Truck, Flatbed, 10T, Hwy	1	117	Diesel
327	Intakes	Truck, Flatbed, 2T, Hwy	2	74	Gasoline
327	Intakes	Truck, Water, 4 mgal, Hwy	1	1	Diesel
329	Intakes	Boom Truck, 8 Tn Boom	1	20	Diesel
329	Intakes	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
329	Intakes	Truck, Flatbed, 10T, Hwy	1	56	Diesel
353	Intakes	Pickup, 3/4T, 4wd	5	42	Gasoline
353	Intakes	Truck, Water, 4 mgal, Hwy	5	115	Diesel
354	Intakes	Pickup, 3/4T, 4wd	1	28	Gasoline
354	Intakes	Truck, Water, 4 mgal, Hwy	1	48	Diesel
355	Intakes	Pickup, 3/4T, 2wd	1	50	Gasoline
355	Intakes	Transit Mix Truck, 10cy	1	25	Diesel
355	Intakes	Truck, End Dump, 16-20cy, Hwy	2	114	Diesel
355	Intakes	Truck, Tractor, 75000#, 6 x 4	1	139	Diesel
355	Intakes	Truck, Water, 4 mgal, Hwy	1	57	Diesel
357	Intakes	Transit Mix Truck, 10cy	2	47	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
359	Intakes	Truck, Flatbed, 10T, Hwy	3	109	Diesel
359	Intakes	Truck, Tractor, 75000#, 6 x 4	1	131	Diesel
361	Intakes	Boom Truck, 8 Tn Boom	6	48	Diesel
361	Intakes	Pickup, 1/2T, 2wd	3	34	Gasoline
361	Intakes	Truck, End Dump, 10-13cy, Hwy	1	124	Diesel
361	Intakes	Truck, Flatbed, 10T, Hwy	2	126	Diesel
361	Intakes	Truck, Flatbed, 2T, Hwy	3	96	Gasoline
365	Intakes	Pickup, 1/2T, 4wd	1	18	Gasoline
365	Intakes	Truck, Tractor, 75000#, 6 x 4	1	52	Diesel
365	Intakes	Truck, Water, 4 mgal, Hwy	1	18	Diesel
367	Intakes	Transit Mix Truck, 10cy	2	49	Diesel
367	Intakes	Truck, Flatbed, 10T, Hwy	1	138	Diesel
369	Intakes	Boom Truck, 8 Tn Boom	1	20	Diesel
369	Intakes	Pickup, 1/2T, 2wd	1	4	Gasoline
369	Intakes	Truck, Flatbed, 10T, Hwy	1	7	Diesel
369	Intakes	Truck, Flatbed, 2T, Hwy	1	10	Gasoline
369	Intakes	Truck, Tractor, 75000#, 6 x 4	1	60	Diesel
371	Intakes	Pickup, 1/2T, 2wd	1	39	Gasoline
371	Intakes	Pickup, 1/2T, 4wd	1	1	Gasoline
371	Intakes	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
371	Intakes	Truck, End Dump, 16-20cy, Hwy	4	130	Diesel
371	Intakes	Truck, Flatbed, 2T, Hwy	1	28	Gasoline
371	Intakes	Truck, Water, 4 mgal, Hwy	1	24	Diesel
503	Intakes	Boom Truck, 8 Tn Boom	1	32	Diesel
503	Intakes	Pickup, 1/2T, 2wd	1	32	Gasoline
503	Intakes	Pickup, 1/2T, 4wd	2	28	Gasoline
503	Intakes	Pickup, 3/4T, 2wd	1	2	Gasoline
503	Intakes	Pickup, 3/4T, 4wd	1	4	Gasoline
503	Intakes	Transit Mix Truck, 10cy	1	17	Diesel
503	Intakes	Truck, End Dump, 10-13cy, Hwy	1	38	Diesel
503	Intakes	Truck, Flatbed, 2T, Hwy	1	8	Gasoline
503	Intakes	Truck, Tractor, 75000#, 6 x 4	1	6	Diesel
503	Intakes	Truck, Water, 4 mgal, Hwy	1	44	Diesel
505	Intakes	Boom Truck, 8 Tn Boom	1	0	Diesel
505	Intakes	Mechanics Truck	1	38	Diesel
505	Intakes	Pickup, 1/2T, 2wd	1	29	Gasoline
505	Intakes	Pickup, 1/2T, 4wd	1	4	Gasoline
505	Intakes	Pickup, 3/4T, 4wd	1	3	Gasoline
505	Intakes	Truck, End Dump, 10-13cy, Hwy	1	10	Diesel
505	Intakes	Truck, End Dump, 16-20cy, Hwy	2	107	Diesel
505	Intakes	Truck, Flatbed, 10T, Hwy	1	107	Diesel
505	Intakes	Truck, Tractor, 75000#, 6 x 4	1	15	Diesel
505	Intakes	Truck, Water, 4 mgal, Hwy	4	122	Diesel
506	Intakes	Boom Truck, 8 Tn Boom	1	7	Diesel
506	Intakes	Pickup, 3/4T, 2wd	1	38	Gasoline
506	Intakes	Pickup, 3/4T, 4wd	1	2	Gasoline
506	Intakes	Transit Mix Truck, 10cy	2	36	Diesel
506	Intakes	Truck, End Dump, 10-13cy, Hwy	1	58	Diesel
506	Intakes	Truck, Tractor, 75000#, 6 x 4	1	54	Diesel
506	Intakes	Truck, Water, 4 mgal, Hwy	1	6	Diesel
509	Intakes	Pickup, 1/2T, 2wd	4	45	Gasoline
509	Intakes	Pickup, 1/2T, 4wd	1	22	Gasoline
509	Intakes	Pickup, 3/4T, 4wd	1	12	Gasoline
509	Intakes	Truck, End Dump, 10-13cy, Hwy	3	104	Diesel
509	Intakes	Truck, Flatbed, 2T, Hwy	1	115	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
509	Intakes	Truck, Water, 4 mgal, Hwy	2	105	Diesel
511	Intakes	Boom Truck, 8 Tn Boom	1	3	Diesel
511	Intakes	Mechanics Truck	2	79	Diesel
511	Intakes	Pickup, 1/2T, 2wd	1	6	Gasoline
511	Intakes	Pickup, 1/2T, 4wd	4	94	Gasoline
511	Intakes	Truck, Flatbed, 10T, Hwy	2	220	Diesel
511	Intakes	Truck, Tractor, 75000#, 6 x 4	1	55	Diesel
513	Intakes	Pickup, 1/2T, 4wd	3	39	Gasoline
513	Intakes	Truck, Water, 4 mgal, Hwy	1	9	Diesel
515	Intakes	Boom Truck, 8 Tn Boom	1	2	Diesel
515	Intakes	Pickup, 1/2T, 2wd	1	5	Gasoline
515	Intakes	Pickup, 1/2T, 4wd	1	69	Gasoline
515	Intakes	Transit Mix Truck, 10cy	1	26	Diesel
515	Intakes	Truck, Flatbed, 10T, Hwy	1	99	Diesel
517	Intakes	Transit Mix Truck, 10cy	10	48	Diesel
519	Intakes	Pickup, 3/4T, 2wd	12	47	Gasoline
519	Intakes	Truck, Tractor, 75000#, 6 x 4	21	135	Diesel
521	Intakes	Transit Mix Truck, 10cy	1	41	Diesel
523	Intakes	Truck, Flatbed, 10T, Hwy	1	55	Diesel
523	Intakes	Truck, Tractor, 75000#, 6 x 4	1	53	Diesel
525	Intakes	Truck, Flatbed, 10T, Hwy	1	15	Diesel
527	Intakes	Boom Truck, 8 Tn Boom	1	35	Diesel
527	Intakes	Pickup, 1/2T, 2wd	2	32	Gasoline
527	Intakes	Pickup, 3/4T, 4wd	1	1	Gasoline
527	Intakes	Transit Mix Truck, 10cy	1	1	Diesel
527	Intakes	Truck, Flatbed, 10T, Hwy	1	131	Diesel
527	Intakes	Truck, Flatbed, 2T, Hwy	2	85	Gasoline
527	Intakes	Truck, Water, 4 mgal, Hwy	1	1	Diesel
529	Intakes	Boom Truck, 8 Tn Boom	1	20	Diesel
529	Intakes	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
529	Intakes	Truck, Flatbed, 10T, Hwy	1	56	Diesel
553	Intakes	Pickup, 3/4T, 4wd	3	36	Gasoline
553	Intakes	Truck, Water, 4 mgal, Hwy	3	98	Diesel
554	Intakes	Pickup, 3/4T, 4wd	2	26	Gasoline
554	Intakes	Truck, Water, 4 mgal, Hwy	1	90	Diesel
555	Intakes	Pickup, 3/4T, 2wd	1	50	Gasoline
555	Intakes	Transit Mix Truck, 10cy	1	25	Diesel
555	Intakes	Truck, End Dump, 16-20cy, Hwy	2	114	Diesel
555	Intakes	Truck, Tractor, 75000#, 6 x 4	1	139	Diesel
555	Intakes	Truck, Water, 4 mgal, Hwy	1	57	Diesel
557	Intakes	Transit Mix Truck, 10cy	2	39	Diesel
559	Intakes	Truck, Flatbed, 10T, Hwy	3	109	Diesel
559	Intakes	Truck, Tractor, 75000#, 6 x 4	1	131	Diesel
561	Intakes	Boom Truck, 8 Tn Boom	3	36	Diesel
561	Intakes	Pickup, 1/2T, 2wd	1	39	Gasoline
561	Intakes	Truck, End Dump, 10-13cy, Hwy	1	47	Diesel
561	Intakes	Truck, Flatbed, 10T, Hwy	1	95	Diesel
561	Intakes	Truck, Flatbed, 2T, Hwy	1	108	Gasoline
7003	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	5	33	Gasoline
7004	Intermediate Forebay	T50xx001 Pickup, 1/2T, 2wd	1	29	Gasoline
7004	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	1	0	Gasoline
7004	Intermediate Forebay	T50xx005 Pickup, 3/4T, 4wd	1	4	Gasoline
7004	Intermediate Forebay	T50xx022 Truck, Flatbed, 10T, Hwy	1	48	Diesel
7004	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	11	Diesel
7004	Intermediate Forebay	T50xx031 Truck, Tractor, 75000#, 6 x 4	1	32	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
7004	Intermediate Forebay	T50xx032 Truck, End Dump, 10-13cy, Hwy	1	2	Diesel
7004	Intermediate Forebay	TR50XXB1 Boom Truck, 8 Tn Boom	1	0	Diesel
7005	Intermediate Forebay	T50xx001 Pickup, 1/2T, 2wd	2	29	Gasoline
7005	Intermediate Forebay	T50xx002 Pickup, 3/4T, 2wd	1	2	Gasoline
7005	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	1	16	Gasoline
7005	Intermediate Forebay	T50xx005 Pickup, 3/4T, 4wd	1	1	Gasoline
7005	Intermediate Forebay	T50xx023 Truck, Flatbed, 2T, Hwy	1	4	Gasoline
7005	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	20	Diesel
7005	Intermediate Forebay	T50xx032 Truck, End Dump, 10-13cy, Hwy	1	11	Diesel
7005	Intermediate Forebay	TR40XX03 Transit Mix Truck, 10cy	1	9	Diesel
7005	Intermediate Forebay	TR50XXB1 Boom Truck, 8 Tn Boom	1	29	Diesel
7006	Intermediate Forebay	T50xx001 Pickup, 1/2T, 2wd	1	5	Gasoline
7010	Intermediate Forebay	T50xx001 Pickup, 1/2T, 2wd	3	40	Gasoline
7010	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	1	10	Gasoline
7010	Intermediate Forebay	T50xx005 Pickup, 3/4T, 4wd	1	1	Gasoline
7010	Intermediate Forebay	T50xx022 Truck, Flatbed, 10T, Hwy	1	49	Diesel
7010	Intermediate Forebay	T50xx023 Truck, Flatbed, 2T, Hwy	1	14	Gasoline
7010	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	3	Diesel
7010	Intermediate Forebay	T50xx032 Truck, End Dump, 10-13cy, Hwy	1	6	Diesel
7010	Intermediate Forebay	TR50XXB1 Boom Truck, 8 Tn Boom	1	3	Diesel
7010	Intermediate Forebay	TRMECH01 Mechanics Truck	1	18	Diesel
7020	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	1	1	Gasoline
7020	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	1	Diesel
7022	Intermediate Forebay	T50xx002 Pickup, 3/4T, 2wd	1	44	Gasoline
7022	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	124	Diesel
7035	Intermediate Forebay	T50xx023 Truck, Flatbed, 2T, Hwy	1	29	Gasoline
7035	Intermediate Forebay	TR40XX03 Transit Mix Truck, 10cy	2	31	Diesel
7040	Intermediate Forebay	T50xx022 Truck, Flatbed, 10T, Hwy	1	33	Diesel
7050	Intermediate Forebay	T50xx004 Pickup, 1/2T, 4wd	1	5	Gasoline
7050	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	1	3	Diesel
7052	Intermediate Forebay	T50xx002 Pickup, 3/4T, 2wd	2	27	Gasoline
7052	Intermediate Forebay	T50xx025 Truck, Water, 4 mgal, Hwy	2	75	Diesel
7065	Intermediate Forebay	T50xx023 Truck, Flatbed, 2T, Hwy	1	17	Gasoline
7065	Intermediate Forebay	TR40XX03 Transit Mix Truck, 10cy	2	26	Diesel
7070	Intermediate Forebay	T50xx022 Truck, Flatbed, 10T, Hwy	1	36	Diesel
9999	Permeant Power	Line truck - Line Strining - 230kV	1	40	Diesel
1030	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	19	Diesel
1030	Reach 7/Combined Pump Plant	Mechanics Truck	2	82	Diesel
1030	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	38	Gasoline
1030	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	3	118	Gasoline
1030	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	230	Diesel
1030	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	13	Diesel
1040	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	335	Diesel
1140	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	6	Diesel
1140	Reach 7/Combined Pump Plant	Mechanics Truck	1	48	Diesel
1140	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	12	Gasoline
1140	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	78	Gasoline
1140	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	134	Diesel
1340	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	336	Diesel
1480	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	322	Diesel
1520	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	19	Diesel
1520	Reach 7/Combined Pump Plant	Mechanics Truck	2	82	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1520	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	38	Gasoline
1520	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	3	118	Gasoline
1520	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	230	Diesel
1520	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	13	Diesel
1530	Reach 7/Combined Pump Plant	Mechanics Truck	1	102	Diesel
1530	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	78	Gasoline
1530	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	286	Diesel
1540	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	335	Diesel
1710	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	336	Diesel
1970	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	15	Diesel
1970	Reach 7/Combined Pump Plant	Mechanics Truck	1	96	Diesel
1970	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	29	Gasoline
1970	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	113	Gasoline
1970	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	268	Diesel
1980	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	1	336	Diesel
2020	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	15	Diesel
2020	Reach 7/Combined Pump Plant	Mechanics Truck	1	96	Diesel
2020	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	29	Gasoline
2020	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	113	Gasoline
2020	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	268	Diesel
2021	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	1	336	Diesel
2033	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	2	Diesel
2033	Reach 7/Combined Pump Plant	Mechanics Truck	2	102	Diesel
2033	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	5	Gasoline
2033	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	113	Gasoline
2033	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	2	Gasoline
2033	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	285	Diesel
2033	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	40	Diesel
2033	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	7	Diesel
2040	Reach 7/Combined Pump Plant	50 T LOWBOW W/ TRACTR HR DSL	1	116	Diesel
2040	Reach 7/Combined Pump Plant	MECHANIC TRUCK 2 T HRLY GAS	1	41	Gasoline
2040	Reach 7/Combined Pump Plant	P/UP 1/2 T 2X4 HRLY GAS NML	8	106	Gasoline
2040	Reach 7/Combined Pump Plant	BOOM TRK HRLY DIESEL	1	83	Diesel
2040	Reach 7/Combined Pump Plant	FUEL TRUCK 4000 GAL HR DSL	1	116	Diesel
2040	Reach 7/Combined Pump Plant	P/UP 1/2 T 2X4 HRLY GAS NML	8	106	Gasoline
2040	Reach 7/Combined Pump Plant	WATER TRK TO 4000 GAL HR DSL	1	116	Diesel
2043	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	6	Diesel
2043	Reach 7/Combined Pump Plant	Mechanics Truck	3	96	Diesel
2043	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	22	Gasoline
2043	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	8	117	Gasoline
2043	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	0	Gasoline
2043	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	1	Gasoline
2043	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	81	Diesel
2043	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	5	Diesel
2043	Reach 7/Combined Pump Plant	Truck, End Dump, 16-20cy, Hwy	1	141	Diesel
2043	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	3	269	Diesel
2043	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	130	Diesel
2043	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	9	Diesel
2053	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	300	Diesel
2060	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	4	41	Gasoline
2060	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	10	Gasoline
2060	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	2	124	Diesel
2060	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	130	Diesel
2063	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	98	Diesel
2070	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	3	43	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2070	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	2	84	Gasoline
2070	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	42	Diesel
2073	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	267	Diesel
2073	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	15	Diesel
2083	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	300	Diesel
2090	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	2	322	Diesel
2093	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	98	Diesel
2103	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	267	Diesel
2103	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	15	Diesel
2113	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	50	Gasoline
2113	Reach 7/Combined Pump Plant	Truck, End Dump, 16-20cy, Hwy	4	115	Diesel
2113	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	127	Gasoline
2113	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	47	Diesel
2123	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	2	Diesel
2123	Reach 7/Combined Pump Plant	Mechanics Truck	2	101	Diesel
2123	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	5	Gasoline
2123	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	112	Gasoline
2123	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	1	Gasoline
2123	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	282	Diesel
2123	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	40	Diesel
2123	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	3	Diesel
2133	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	7	Diesel
2133	Reach 7/Combined Pump Plant	Mechanics Truck	3	96	Diesel
2133	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	30	Gasoline
2133	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	8	117	Gasoline
2133	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	1	Gasoline
2133	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	81	Diesel
2133	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	8	Diesel
2133	Reach 7/Combined Pump Plant	Truck, End Dump, 16-20cy, Hwy	1	247	Diesel
2133	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	3	269	Diesel
2133	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	27	Gasoline
2133	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	139	Diesel
2133	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	23	Diesel
2153	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	98	Diesel
2173	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	4	333	Diesel
2183	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	98	Diesel
2213	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	2	Diesel
2213	Reach 7/Combined Pump Plant	Mechanics Truck	2	97	Diesel
2213	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	5	Gasoline
2213	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	108	Gasoline
2213	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	3	Gasoline
2213	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2213	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2213	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	8	Diesel
2253	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	267	Diesel
2253	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	15	Diesel
2283	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	267	Diesel
2283	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	15	Diesel
2303	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	2	Diesel
2303	Reach 7/Combined Pump Plant	Mechanics Truck	2	101	Diesel
2303	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	5	Gasoline
2303	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	112	Gasoline
2303	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	2	Gasoline
2303	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	282	Diesel
2303	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	40	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2303	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2313	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	7	Diesel
2313	Reach 7/Combined Pump Plant	Mechanics Truck	3	84	Diesel
2313	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	29	Gasoline
2313	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	108	Gasoline
2313	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	1	Gasoline
2313	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	2	73	Diesel
2313	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2313	Reach 7/Combined Pump Plant	Truck, End Dump, 16-20cy, Hwy	1	335	Diesel
2313	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	3	235	Diesel
2313	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	174	Diesel
2313	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	13	Diesel
2323	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	272	Diesel
2323	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	1	64	Diesel
2343	Reach 7/Combined Pump Plant	10 CY HWY TRK RR DMP 10 W DS	3	272	Diesel
2353	Reach 7/Combined Pump Plant	10CY CON MIX TRCK 250 HP DSL	2	66	Diesel
2363	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	2	Diesel
2363	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	1	Diesel
2363	Reach 7/Combined Pump Plant	Mechanics Truck	2	101	Diesel
2363	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	14	Gasoline
2363	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	7	112	Gasoline
2363	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	3	Gasoline
2363	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2363	Reach 7/Combined Pump Plant	Truck, End Dump, 16-20cy, Hwy	1	233	Diesel
2363	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	282	Diesel
2363	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	66	Diesel
2363	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	22	Diesel
7507	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	28	39	Gasoline
7507	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	10	103	Gasoline
7508	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	28	40	Gasoline
7508	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	10	104	Gasoline
7510	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	1	Diesel
7510	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	3	37	Gasoline
7510	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	1	Gasoline
7510	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	12	Gasoline
7510	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	15	Gasoline
7510	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	9	Diesel
7510	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	96	Diesel
7510	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	123	Diesel
7510	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	85	Diesel
7512	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	38	Diesel
7512	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	38	Gasoline
7512	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	22	Gasoline
7512	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	3	Gasoline
7512	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	4	Gasoline
7512	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	26	Diesel
7512	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	15	Diesel
7512	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	12	Gasoline
7512	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	29	Diesel
7516	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	39	Gasoline
7517	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	2	61	Gasoline
7518	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	2	62	Gasoline
7530	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	99	Gasoline
7530	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	20	Gasoline
7530	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	26	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
7530	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	64	Diesel
7530	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	16	Gasoline
7530	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	3	236	Diesel
7535	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	3	48	Gasoline
7535	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	2	Gasoline
7535	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	15	Diesel
7540	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	23	Gasoline
7540	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	32	Gasoline
7540	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	5	Gasoline
7540	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	23	Diesel
7540	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	115	Gasoline
7540	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	41	Diesel
7540	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	62	Diesel
7725	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	50	Gasoline
7725	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	84	Diesel
7725	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	35	Diesel
7730	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	40	Gasoline
7730	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	33	Gasoline
7730	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	3	Diesel
7730	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	112	Diesel
7730	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	138	Diesel
7730	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	17	Diesel
7780	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	50	Gasoline
7780	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	84	Diesel
7780	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	35	Diesel
7785	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	40	Gasoline
7785	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	33	Gasoline
7785	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	3	Diesel
7785	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	2	112	Diesel
7785	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	138	Diesel
7785	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	17	Diesel
7810	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	15	Gasoline
7810	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	4	39	Diesel
7810	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	4	Diesel
7810	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	77	Diesel
7820	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	31	Gasoline
7820	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	2	46	Gasoline
7820	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	15	Gasoline
7820	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	2	128	Diesel
7820	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	22	Diesel
7830	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	31	Gasoline
7830	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	44	Diesel
7850	Reach 7/Combined Pump Plant	Truck, Flatbed, 10T, Hwy	1	138	Diesel
7915	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	2	128	Diesel
7917	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	2	128	Diesel
7920	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	4	49	Gasoline
7920	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	3	112	Gasoline
7922	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	4	49	Gasoline
7922	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	3	112	Gasoline
7925	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	40	Diesel
7925	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	40	Gasoline
7925	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	2	Gasoline
7925	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	11	Diesel
7925	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	5	Gasoline
7925	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	3	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
7930	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	2	37	Diesel
7930	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	2	37	Gasoline
7930	Reach 7/Combined Pump Plant	Pickup, 1/2T, 4wd	1	41	Gasoline
7930	Reach 7/Combined Pump Plant	Pickup, 3/4T, 2wd	1	3	Gasoline
7930	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	6	Gasoline
7930	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	33	Diesel
7930	Reach 7/Combined Pump Plant	Truck, End Dump, 10-13cy, Hwy	1	27	Diesel
7930	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	15	Gasoline
7930	Reach 7/Combined Pump Plant	Truck, Tractor, 75000#, 6 x 4	1	8	Diesel
7930	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	37	Diesel
7935	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	36	Diesel
7935	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	41	Gasoline
7935	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	4	Gasoline
7935	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	23	Diesel
7935	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	14	Gasoline
7935	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	6	Diesel
7940	Reach 7/Combined Pump Plant	Boom Truck, 8 Tn Boom	1	10	Diesel
7940	Reach 7/Combined Pump Plant	Pickup, 1/2T, 2wd	1	20	Gasoline
7940	Reach 7/Combined Pump Plant	Pickup, 3/4T, 4wd	1	5	Gasoline
7940	Reach 7/Combined Pump Plant	Transit Mix Truck, 10cy	1	34	Diesel
7940	Reach 7/Combined Pump Plant	Truck, Flatbed, 2T, Hwy	1	16	Gasoline
7940	Reach 7/Combined Pump Plant	Truck, Water, 4 mgal, Hwy	1	7	Diesel
1020	Reach 4	Boom Truck, 8 Tn Boom	1	50	Diesel
1020	Reach 4	Pickup, 1/2T, 2wd	1	3	Gasoline
1030	Reach 4	Mechanics Truck	1	50	Diesel
1030	Reach 4	Pickup, 1/2T, 4wd	1	3	Gasoline
1030	Reach 4	Transit Mix Truck, 10cy	2	2	Diesel
1030	Reach 4	Truck, Flatbed, 10T, Hwy	1	7	Diesel
1040	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	8	Diesel
1100	Reach 4	10CY CON MIX TRCK 250 HP DSL	25	2	Diesel
1140	Reach 4	Boom Truck, 8 Tn Boom	1	2	Diesel
1140	Reach 4	Mechanics Truck	3	7	Diesel
1140	Reach 4	Pickup, 1/2T, 2wd	1	2	Gasoline
1140	Reach 4	Pickup, 1/2T, 4wd	9	2	Gasoline
1140	Reach 4	Truck, Flatbed, 10T, Hwy	3	2	Diesel
1140	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	119	Diesel
1160	Reach 4	10CY CON MIX TRCK 250 HP DSL	4	45	Diesel
1170	Reach 4	Boom Truck, 8 Tn Boom	1	119	Diesel
1170	Reach 4	Pickup, 1/2T, 2wd	1	67	Gasoline
1180	Reach 4	Mechanics Truck	1	97	Diesel
1180	Reach 4	Pickup, 1/2T, 4wd	1	96	Gasoline
1180	Reach 4	Transit Mix Truck, 10cy	2	97	Diesel
1180	Reach 4	Truck, Flatbed, 10T, Hwy	1	97	Diesel
1190	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	96	Diesel
1200	Reach 4	Boom Truck, 8 Tn Boom	1	97	Diesel
1200	Reach 4	Mechanics Truck	2	97	Diesel
1200	Reach 4	Pickup, 1/2T, 2wd	1	97	Gasoline
1200	Reach 4	Pickup, 1/2T, 4wd	4	100	Gasoline
1200	Reach 4	Truck, Flatbed, 10T, Hwy	2	6	Diesel
1200	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	100	Diesel
1220	Reach 4	10CY CON MIX TRCK 250 HP DSL	4	6	Diesel
1270	Reach 4	10CY CON MIX TRCK 250 HP DSL	4	5	Diesel
1320	Reach 4	10CY CON MIX TRCK 250 HP DSL	2	20	Diesel
1330	Reach 4	10 CY HWY TRK RR DMP 10 W DS	2	21	Diesel
1330	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	42	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1340	Reach 4	10 CY HWY TRK RR DMP 10 W DS	2	43	Diesel
1340	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	6	Diesel
2033	Reach 4	Boom Truck, 8 Tn Boom	1	18	Diesel
2033	Reach 4	Mechanics Truck	2	5	Diesel
2033	Reach 4	Pickup, 1/2T, 2wd	1	20	Gasoline
2033	Reach 4	Pickup, 1/2T, 4wd	5	5	Gasoline
2033	Reach 4	Pickup, 3/4T, 2wd	1	20	Gasoline
2033	Reach 4	Truck, Flatbed, 10T, Hwy	2	5	Diesel
2033	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	34	Diesel
2033	Reach 4	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2040	Reach 4	50 T LOWBOW W/ TRACTR HR DSL	1	5	Diesel
2040	Reach 4	BOOM TRK HRLY DIESEL	1	119	Diesel
2040	Reach 4	MECHANIC TRUCK 2 T HRLY GAS	1	45	Gasoline
2040	Reach 4	P/UP 1/2 T 2X4 HRLY GAS NML	5	119	Gasoline
2043	Reach 4	Boom Truck, 8 Tn Boom	1	100	Diesel
2043	Reach 4	Mechanics Truck	3	117	Diesel
2043	Reach 4	Pickup, 1/2T, 2wd	1	105	Gasoline
2043	Reach 4	Pickup, 1/2T, 4wd	7	47	Gasoline
2043	Reach 4	Pickup, 3/4T, 4wd	1	10	Gasoline
2043	Reach 4	Transit Mix Truck, 10cy	1	117	Diesel
2043	Reach 4	Truck, End Dump, 10-13cy, Hwy	1	117	Diesel
2043	Reach 4	Truck, End Dump, 16-20cy, Hwy	1	105	Diesel
2043	Reach 4	Truck, Flatbed, 10T, Hwy	3	108	Diesel
2043	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	1	Diesel
2043	Reach 4	Truck, Water, 4 mgal, Hwy	1	117	Diesel
2050	Reach 4	Boom Truck, 8 Tn Boom	1	117	Diesel
2050	Reach 4	Pickup, 1/2T, 2wd	1	3	Gasoline
2050	Reach 4	Pickup, 1/2T, 4wd	16	1	Gasoline
2050	Reach 4	Pickup, 3/4T, 2wd	1	3	Gasoline
2050	Reach 4	Pickup, 3/4T, 4wd	1	3	Gasoline
2050	Reach 4	Transit Mix Truck, 10cy	1	2	Diesel
2050	Reach 4	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
2050	Reach 4	Truck, Flatbed, 2T, Hwy	6	3	Gasoline
2050	Reach 4	Truck, Water, 4 mgal, Hwy	1	3	Diesel
2053	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	2	Diesel
2060	Reach 4	Pickup, 1/2T, 2wd	4	1	Gasoline
2060	Reach 4	Pickup, 1/2T, 4wd	1	2	Gasoline
2060	Reach 4	Truck, End Dump, 10-13cy, Hwy	2	79	Diesel
2060	Reach 4	Truck, Water, 4 mgal, Hwy	2	79	Diesel
2063	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	81	Diesel
2070	Reach 4	Pickup, 1/2T, 2wd	3	3	Gasoline
2070	Reach 4	Truck, Flatbed, 2T, Hwy	2	81	Gasoline
2070	Reach 4	Truck, Water, 4 mgal, Hwy	1	7	Diesel
2073	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	3	Diesel
2073	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	134	Diesel
2080	Reach 4	Pickup, 1/2T, 2wd	1	7	Gasoline
2083	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	5	Diesel
2093	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	110	Diesel
2113	Reach 4	Pickup, 1/2T, 2wd	1	84	Gasoline
2113	Reach 4	Truck, End Dump, 16-20cy, Hwy	2	108	Diesel
2113	Reach 4	Truck, Flatbed, 2T, Hwy	1	110	Gasoline
2113	Reach 4	Truck, Water, 4 mgal, Hwy	1	240	Diesel
2123	Reach 4	Boom Truck, 8 Tn Boom	1	335	Diesel
2123	Reach 4	Mechanics Truck	2	125	Diesel
2123	Reach 4	Pickup, 1/2T, 2wd	1	335	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2123	Reach 4	Pickup, 1/2T, 4wd	5	187	Gasoline
2123	Reach 4	Pickup, 3/4T, 2wd	1	272	Gasoline
2123	Reach 4	Truck, Flatbed, 10T, Hwy	2	269	Diesel
2123	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	272	Diesel
2123	Reach 4	Truck, Water, 4 mgal, Hwy	1	272	Diesel
2193	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	269	Diesel
2193	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	272	Diesel
2203	Reach 4	Pickup, 1/2T, 2wd	1	272	Gasoline
2203	Reach 4	Truck, End Dump, 16-20cy, Hwy	2	272	Diesel
2203	Reach 4	Truck, Flatbed, 2T, Hwy	1	131	Gasoline
2203	Reach 4	Truck, Water, 4 mgal, Hwy	1	84	Diesel
2213	Reach 4	Boom Truck, 8 Tn Boom	1	47	Diesel
2213	Reach 4	Mechanics Truck	2	64	Diesel
2213	Reach 4	Pickup, 1/2T, 2wd	1	60	Gasoline
2213	Reach 4	Pickup, 1/2T, 4wd	5	53	Gasoline
2213	Reach 4	Pickup, 3/4T, 2wd	1	53	Gasoline
2213	Reach 4	Truck, Flatbed, 10T, Hwy	2	38	Diesel
2213	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	133	Diesel
2213	Reach 4	Truck, Water, 4 mgal, Hwy	1	38	Diesel
2233	Reach 4	Boom Truck, 8 Tn Boom	1	38	Diesel
2233	Reach 4	Mechanics Truck	3	133	Diesel
2233	Reach 4	Pickup, 1/2T, 2wd	1	38	Gasoline
2233	Reach 4	Pickup, 1/2T, 4wd	7	38	Gasoline
2233	Reach 4	Pickup, 3/4T, 4wd	1	38	Gasoline
2233	Reach 4	Transit Mix Truck, 10cy	1	10	Diesel
2233	Reach 4	Truck, End Dump, 10-13cy, Hwy	1	13	Diesel
2233	Reach 4	Truck, End Dump, 16-20cy, Hwy	1	5	Diesel
2233	Reach 4	Truck, Flatbed, 10T, Hwy	3	70	Diesel
2233	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	42	Diesel
2233	Reach 4	Truck, Water, 4 mgal, Hwy	1	17	Diesel
2243	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	10	Diesel
2253	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	21	Diesel
2263	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	10	Diesel
2273	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	13	Diesel
2283	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	6	Diesel
2283	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	35	Diesel
2293	Reach 4	10 CY HWY TRK RR DMP 10 W DS	3	10	Diesel
2293	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	10	Diesel
2303	Reach 4	Boom Truck, 8 Tn Boom	1	322	Diesel
2303	Reach 4	Mechanics Truck	2	322	Diesel
2303	Reach 4	Pickup, 1/2T, 2wd	1	176	Gasoline
2303	Reach 4	Pickup, 1/2T, 4wd	7	176	Gasoline
2303	Reach 4	Pickup, 3/4T, 2wd	1	302	Gasoline
2303	Reach 4	Truck, Flatbed, 10T, Hwy	2	274	Diesel
2303	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	302	Diesel
2303	Reach 4	Truck, Water, 4 mgal, Hwy	1	236	Diesel
2313	Reach 4	Pickup, 1/2T, 2wd	1	288	Gasoline
2313	Reach 4	Pickup, 1/2T, 4wd	1	288	Gasoline
2313	Reach 4	Pickup, 3/4T, 2wd	1	236	Gasoline
2313	Reach 4	Truck, End Dump, 10-13cy, Hwy	1	274	Diesel
2313	Reach 4	Truck, End Dump, 16-20cy, Hwy	2	312	Diesel
2313	Reach 4	Truck, Flatbed, 2T, Hwy	1	312	Gasoline
2313	Reach 4	Truck, Water, 4 mgal, Hwy	1	118	Diesel
2323	Reach 4	Boom Truck, 8 Tn Boom	1	114	Diesel
2323	Reach 4	Mechanics Truck	2	113	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2323	Reach 4	Pickup, 1/2T, 2wd	1	114	Gasoline
2323	Reach 4	Pickup, 1/2T, 4wd	5	120	Gasoline
2323	Reach 4	Pickup, 3/4T, 2wd	1	26	Gasoline
2323	Reach 4	Truck, Flatbed, 10T, Hwy	2	26	Diesel
2323	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	68	Diesel
2323	Reach 4	Truck, Water, 4 mgal, Hwy	1	18	Diesel
2333	Reach 4	10 CY HWY TRK RR DMP 10 W DS	1	68	Diesel
2333	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	27	Diesel
2343	Reach 4	Boom Truck, 8 Tn Boom	1	71	Diesel
2343	Reach 4	Mechanics Truck	2	71	Diesel
2343	Reach 4	Pickup, 1/2T, 2wd	1	27	Gasoline
2343	Reach 4	Pickup, 1/2T, 4wd	5	18	Gasoline
2343	Reach 4	Pickup, 3/4T, 2wd	1	34	Gasoline
2343	Reach 4	Truck, Flatbed, 10T, Hwy	2	34	Diesel
2343	Reach 4	Truck, Tractor, 75000#, 6 x 4	1	115	Diesel
2343	Reach 4	Truck, Water, 4 mgal, Hwy	1	82	Diesel
2353	Reach 4	10 CY HWY TRK RR DMP 10 W DS	1	41	Diesel
2353	Reach 4	10CY CON MIX TRCK 250 HP DSL	1	111	Diesel
1015	Reach 5	Boom Truck, 8 Tn Boom	1	14	Diesel
1015	Reach 5	Mechanics Truck	5	115	Diesel
1015	Reach 5	Pickup, 1/2T, 2wd	1	40	Gasoline
1015	Reach 5	Pickup, 1/2T, 4wd	15	113	Gasoline
1015	Reach 5	Pickup, 3/4T, 2wd	1	3	Gasoline
1015	Reach 5	Pickup, 3/4T, 4wd	1	3	Gasoline
1015	Reach 5	Transit Mix Truck, 10cy	3	104	Diesel
1015	Reach 5	Truck, End Dump, 10-13cy, Hwy	1	11	Diesel
1015	Reach 5	Truck, End Dump, 16-20cy, Hwy	1	297	Diesel
1015	Reach 5	Truck, Flatbed, 10T, Hwy	5	321	Diesel
1015	Reach 5	Truck, Tractor, 75000#, 6 x 4	2	181	Diesel
1015	Reach 5	Truck, Water, 4 mgal, Hwy	1	32	Diesel
1040	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	332	Diesel
1060	Reach 5	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1100	Reach 5	10CY CON MIX TRCK 250 HP DSL	2	120	Diesel
1160	Reach 5	10CY CON MIX TRCK 250 HP DSL	4	114	Diesel
1190	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	332	Diesel
1220	Reach 5	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1270	Reach 5	10CY CON MIX TRCK 250 HP DSL	4	114	Diesel
1290	Reach 5	10CY CON MIX TRCK 250 HP DSL	1	80	Diesel
2020	Reach 5	Pickup, 1/2T, 2wd	1	15	Gasoline
2033	Reach 5	Mechanics Truck	2	97	Diesel
2033	Reach 5	Pickup, 1/2T, 4wd	7	108	Gasoline
2033	Reach 5	Pickup, 3/4T, 2wd	1	2	Gasoline
2033	Reach 5	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2033	Reach 5	Truck, Water, 4 mgal, Hwy	1	6	Diesel
2040	Reach 5	50 T LOWBOW W/ TRACTR HR DSL	1	139	Diesel
2040	Reach 5	BOOM TRK HRLY DIESEL	1	99	Diesel
2040	Reach 5	FUEL TRUCK 4000 GAL HR DSL	1	139	Diesel
2040	Reach 5	MECHANIC TRUCK 2 T HRLY GAS	1	50	Gasoline
2040	Reach 5	P/UP 1/2 T 2X4 HRLY GAS NML	4	105	Gasoline
2040	Reach 5	WATER TRK TO 4000 GAL HR DSL	1	139	Diesel
2043	Reach 5	Boom Truck, 8 Tn Boom	1	9	Diesel
2043	Reach 5	Mechanics Truck	3	96	Diesel
2043	Reach 5	Pickup, 1/2T, 2wd	1	25	Gasoline
2043	Reach 5	Pickup, 1/2T, 4wd	8	116	Gasoline
2043	Reach 5	Pickup, 3/4T, 2wd	1	0	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2043	Reach 5	Pickup, 3/4T, 4wd	1	1	Gasoline
2043	Reach 5	Transit Mix Truck, 10cy	1	81	Diesel
2043	Reach 5	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
2043	Reach 5	Truck, End Dump, 16-20cy, Hwy	1	155	Diesel
2043	Reach 5	Truck, Flatbed, 10T, Hwy	3	269	Diesel
2043	Reach 5	Truck, Tractor, 75000#, 6 x 4	1	188	Diesel
2043	Reach 5	Truck, Water, 4 mgal, Hwy	1	8	Diesel
2050	Reach 5	Boom Truck, 8 Tn Boom	1	7	Diesel
2050	Reach 5	Pickup, 1/2T, 2wd	1	15	Gasoline
2050	Reach 5	Pickup, 1/2T, 4wd	8	119	Gasoline
2050	Reach 5	Pickup, 3/4T, 2wd	1	0	Gasoline
2050	Reach 5	Pickup, 3/4T, 4wd	1	0	Gasoline
2050	Reach 5	Transit Mix Truck, 10cy	1	3	Diesel
2050	Reach 5	Truck, End Dump, 10-13cy, Hwy	1	2	Diesel
2050	Reach 5	Truck, Flatbed, 2T, Hwy	3	332	Gasoline
2050	Reach 5	Truck, Water, 4 mgal, Hwy	1	3	Diesel
2053	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	294	Diesel
2060	Reach 5	Pickup, 1/2T, 2wd	1	115	Gasoline
2060	Reach 5	Pickup, 1/2T, 4wd	1	7	Gasoline
2060	Reach 5	Truck, End Dump, 10-13cy, Hwy	1	128	Diesel
2060	Reach 5	Truck, Water, 4 mgal, Hwy	1	69	Diesel
2063	Reach 5	10CY CON MIX TRCK 250 HP DSL	1	82	Diesel
2070	Reach 5	Pickup, 1/2T, 2wd	4	41	Gasoline
2070	Reach 5	Truck, Flatbed, 2T, Hwy	2	105	Gasoline
2070	Reach 5	Truck, Water, 4 mgal, Hwy	1	53	Diesel
2073	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	257	Diesel
2073	Reach 5	10CY CON MIX TRCK 250 HP DSL	1	19	Diesel
2083	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	294	Diesel
2103	Reach 5	10 CY HWY TRK RR DMP 10 W DS	3	257	Diesel
2103	Reach 5	10CY CON MIX TRCK 250 HP DSL	1	19	Diesel
2113	Reach 5	Pickup, 1/2T, 2wd	2	36	Gasoline
2113	Reach 5	Truck, End Dump, 16-20cy, Hwy	4	115	Diesel
2113	Reach 5	Truck, Flatbed, 2T, Hwy	2	127	Gasoline
2113	Reach 5	Truck, Water, 4 mgal, Hwy	1	79	Diesel
2213	Reach 5	Mechanics Truck	2	97	Diesel
2213	Reach 5	Pickup, 1/2T, 4wd	7	108	Gasoline
2213	Reach 5	Pickup, 3/4T, 2wd	1	2	Gasoline
2213	Reach 5	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2213	Reach 5	Truck, Water, 4 mgal, Hwy	1	6	Diesel
2223	Reach 5	Mechanics Truck	2	97	Diesel
2223	Reach 5	Pickup, 1/2T, 4wd	7	108	Gasoline
2223	Reach 5	Pickup, 3/4T, 2wd	1	2	Gasoline
2223	Reach 5	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2223	Reach 5	Truck, Water, 4 mgal, Hwy	1	6	Diesel
2243	Reach 5	10CY CON MIX TRCK 250 HP DSL	1	82	Diesel
1020	Reach 6	Boom Truck, 8 Tn Boom	1	50	Diesel
1020	Reach 6	Pickup, 1/2T, 2wd	1	100	Gasoline
1030	Reach 6	Mechanics Truck	1	119	Diesel
1030	Reach 6	Pickup, 1/2T, 4wd	2	64	Gasoline
1030	Reach 6	Transit Mix Truck, 10cy	1	98	Diesel
1030	Reach 6	Truck, Flatbed, 10T, Hwy	1	335	Diesel
1040	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	336	Diesel
1060	Reach 6	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1090	Reach 6	Boom Truck, 8 Tn Boom	1	5	Diesel
1090	Reach 6	Mechanics Truck	2	62	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1090	Reach 6	Pickup, 1/2T, 2wd	1	11	Gasoline
1090	Reach 6	Pickup, 1/2T, 4wd	3	116	Gasoline
1090	Reach 6	Pickup, 3/4T, 4wd	1	0	Gasoline
1090	Reach 6	Transit Mix Truck, 10cy	1	56	Diesel
1090	Reach 6	Truck, End Dump, 16-20cy, Hwy	1	28	Diesel
1090	Reach 6	Truck, Flatbed, 10T, Hwy	2	174	Diesel
1090	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	101	Diesel
1090	Reach 6	Truck, Water, 4 mgal, Hwy	1	2	Diesel
1100	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	120	Diesel
1140	Reach 6	Boom Truck, 8 Tn Boom	1	3	Diesel
1140	Reach 6	Mechanics Truck	3	89	Diesel
1140	Reach 6	Pickup, 1/2T, 2wd	1	6	Gasoline
1140	Reach 6	Pickup, 1/2T, 4wd	9	116	Gasoline
1140	Reach 6	Truck, Flatbed, 10T, Hwy	3	250	Diesel
1140	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	53	Diesel
1150	Reach 6	10 CY HWY TRK RR DMP 10 W DS	2	195	Diesel
1150	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	45	Diesel
1160	Reach 6	10CY CON MIX TRCK 250 HP DSL	4	120	Diesel
1170	Reach 6	Boom Truck, 8 Tn Boom	1	50	Diesel
1170	Reach 6	Pickup, 1/2T, 2wd	1	100	Gasoline
1180	Reach 6	Mechanics Truck	1	119	Diesel
1180	Reach 6	Pickup, 1/2T, 4wd	2	64	Gasoline
1180	Reach 6	Transit Mix Truck, 10cy	1	98	Diesel
1180	Reach 6	Truck, Flatbed, 10T, Hwy	1	335	Diesel
1190	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	336	Diesel
1200	Reach 6	Boom Truck, 8 Tn Boom	1	3	Diesel
1200	Reach 6	Mechanics Truck	3	89	Diesel
1200	Reach 6	Pickup, 1/2T, 2wd	1	6	Gasoline
1200	Reach 6	Pickup, 1/2T, 4wd	9	116	Gasoline
1200	Reach 6	Truck, Flatbed, 10T, Hwy	3	250	Diesel
1200	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	53	Diesel
1220	Reach 6	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1270	Reach 6	10CY CON MIX TRCK 250 HP DSL	4	120	Diesel
1320	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	16	Diesel
1330	Reach 6	Boom Truck, 8 Tn Boom	1	5	Diesel
1330	Reach 6	Mechanics Truck	2	62	Diesel
1330	Reach 6	Pickup, 1/2T, 2wd	1	11	Gasoline
1330	Reach 6	Pickup, 1/2T, 4wd	3	116	Gasoline
1330	Reach 6	Pickup, 3/4T, 4wd	1	0	Gasoline
1330	Reach 6	Transit Mix Truck, 10cy	1	56	Diesel
1330	Reach 6	Truck, End Dump, 16-20cy, Hwy	1	28	Diesel
1330	Reach 6	Truck, Flatbed, 10T, Hwy	2	174	Diesel
1330	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	101	Diesel
1330	Reach 6	Truck, Water, 4 mgal, Hwy	1	2	Diesel
1340	Reach 6	10 CY HWY TRK RR DMP 10 W DS	2	258	Diesel
1340	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	12	Diesel
1350	Reach 6	10 CY HWY TRK RR DMP 10 W DS	2	195	Diesel
1350	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	45	Diesel
1360	Reach 6	10 CY HWY TRK RR DMP 10 W DS	2	240	Diesel
1360	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	11	Diesel
1400	Reach 6	10 CY HWY TRK RR DMP 10 W DS	1	171	Diesel
1400	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	72	Diesel
1410	Reach 6	10 CY HWY TRK RR DMP 10 W DS	1	171	Diesel
1410	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	72	Diesel
1450	Reach 6	Pickup, 1/2T, 2wd	1	48	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1450	Reach 6	Pickup, 1/2T, 4wd	1	1	Gasoline
1450	Reach 6	Pickup, 3/4T, 2wd	1	7	Gasoline
1450	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	8	Diesel
1450	Reach 6	Truck, End Dump, 16-20cy, Hwy	6	117	Diesel
1450	Reach 6	Truck, Flatbed, 2T, Hwy	1	78	Gasoline
1450	Reach 6	Truck, Water, 4 mgal, Hwy	1	56	Diesel
1460	Reach 6	Pickup, 1/2T, 2wd	1	44	Gasoline
1460	Reach 6	Pickup, 1/2T, 4wd	1	1	Gasoline
1460	Reach 6	Pickup, 3/4T, 2wd	1	7	Gasoline
1460	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
1460	Reach 6	Truck, End Dump, 16-20cy, Hwy	5	135	Diesel
1460	Reach 6	Truck, Flatbed, 2T, Hwy	1	62	Gasoline
1460	Reach 6	Truck, Water, 4 mgal, Hwy	1	51	Diesel
2033	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2033	Reach 6	Mechanics Truck	2	97	Diesel
2033	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2033	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2033	Reach 6	Pickup, 3/4T, 2wd	1	2	Gasoline
2033	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2033	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2033	Reach 6	Truck, Water, 4 mgal, Hwy	1	6	Diesel
2040	Reach 6	50 T LOWBOW W/ TRACTR HR DSL	1	115	Diesel
2040	Reach 6	BOOM TRK HRLY DIESEL	1	82	Diesel
2040	Reach 6	FUEL TRUCK 4000 GAL HR DSL	1	115	Diesel
2040	Reach 6	MECHANIC TRUCK 2 T HRLY GAS	1	41	Gasoline
2040	Reach 6	P/UP 1/2 T 2X4 HRLY GAS NML	6	106	Gasoline
2040	Reach 6	P/UP 1/2 T 2X4 HRLY GAS NML	6	106	Gasoline
2040	Reach 6	WATER TRK TO 4000 GAL HR DSL	1	115	Diesel
2043	Reach 6	Boom Truck, 8 Tn Boom	1	9	Diesel
2043	Reach 6	Mechanics Truck	3	96	Diesel
2043	Reach 6	Pickup, 1/2T, 2wd	1	25	Gasoline
2043	Reach 6	Pickup, 1/2T, 4wd	8	116	Gasoline
2043	Reach 6	Pickup, 3/4T, 2wd	1	0	Gasoline
2043	Reach 6	Pickup, 3/4T, 4wd	1	1	Gasoline
2043	Reach 6	Transit Mix Truck, 10cy	1	81	Diesel
2043	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
2043	Reach 6	Truck, End Dump, 16-20cy, Hwy	1	83	Diesel
2043	Reach 6	Truck, Flatbed, 10T, Hwy	3	269	Diesel
2043	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	188	Diesel
2043	Reach 6	Truck, Water, 4 mgal, Hwy	1	8	Diesel
2050	Reach 6	Boom Truck, 8 Tn Boom	1	8	Diesel
2050	Reach 6	Pickup, 1/2T, 2wd	1	32	Gasoline
2050	Reach 6	Pickup, 1/2T, 4wd	10	115	Gasoline
2050	Reach 6	Pickup, 3/4T, 2wd	1	3	Gasoline
2050	Reach 6	Pickup, 3/4T, 4wd	1	3	Gasoline
2050	Reach 6	Transit Mix Truck, 10cy	1	3	Diesel
2050	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	8	Diesel
2050	Reach 6	Truck, Flatbed, 10T, Hwy	1	22	Diesel
2050	Reach 6	Truck, Flatbed, 2T, Hwy	4	299	Gasoline
2050	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	20	Diesel
2050	Reach 6	Truck, Water, 4 mgal, Hwy	1	18	Diesel
2053	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	301	Diesel
2060	Reach 6	Pickup, 1/2T, 2wd	2	82	Gasoline
2060	Reach 6	Pickup, 1/2T, 4wd	1	10	Gasoline
2060	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	247	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2060	Reach 6	Truck, Water, 4 mgal, Hwy	1	130	Diesel
2063	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	80	Diesel
2070	Reach 6	Pickup, 1/2T, 2wd	3	43	Gasoline
2070	Reach 6	Truck, Flatbed, 2T, Hwy	2	84	Gasoline
2070	Reach 6	Truck, Water, 4 mgal, Hwy	1	42	Diesel
2073	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	249	Diesel
2073	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2080	Reach 6	Pickup, 1/2T, 2wd	1	27	Gasoline
2083	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	301	Diesel
2093	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	80	Diesel
2103	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	249	Diesel
2103	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2113	Reach 6	Pickup, 1/2T, 2wd	1	50	Gasoline
2113	Reach 6	Truck, End Dump, 16-20cy, Hwy	4	115	Diesel
2113	Reach 6	Truck, Flatbed, 2T, Hwy	1	127	Gasoline
2113	Reach 6	Truck, Water, 4 mgal, Hwy	1	47	Diesel
2123	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2123	Reach 6	Mechanics Truck	2	97	Diesel
2123	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2123	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2123	Reach 6	Pickup, 3/4T, 2wd	1	1	Gasoline
2123	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2123	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2123	Reach 6	Truck, Water, 4 mgal, Hwy	1	3	Diesel
2133	Reach 6	Boom Truck, 8 Tn Boom	1	9	Diesel
2133	Reach 6	Mechanics Truck	3	96	Diesel
2133	Reach 6	Pickup, 1/2T, 2wd	1	29	Gasoline
2133	Reach 6	Pickup, 1/2T, 4wd	8	116	Gasoline
2133	Reach 6	Pickup, 3/4T, 4wd	1	2	Gasoline
2133	Reach 6	Transit Mix Truck, 10cy	1	81	Diesel
2133	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2133	Reach 6	Truck, End Dump, 16-20cy, Hwy	1	211	Diesel
2133	Reach 6	Truck, Flatbed, 10T, Hwy	3	269	Diesel
2133	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	202	Diesel
2133	Reach 6	Truck, Water, 4 mgal, Hwy	1	20	Diesel
2143	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	301	Diesel
2143	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	105	Diesel
2163	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	249	Diesel
2163	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2173	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	301	Diesel
2183	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	80	Diesel
2193	Reach 6	10 CY HWY TRK RR DMP 10 W DS	3	249	Diesel
2193	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2203	Reach 6	Pickup, 1/2T, 2wd	1	50	Gasoline
2203	Reach 6	Truck, End Dump, 16-20cy, Hwy	5	137	Diesel
2203	Reach 6	Truck, Flatbed, 2T, Hwy	1	127	Gasoline
2203	Reach 6	Truck, Water, 4 mgal, Hwy	1	47	Diesel
2213	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2213	Reach 6	Mechanics Truck	2	97	Diesel
2213	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2213	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2213	Reach 6	Pickup, 3/4T, 2wd	1	3	Gasoline
2213	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2213	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2213	Reach 6	Truck, Water, 4 mgal, Hwy	1	8	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2233	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2233	Reach 6	Mechanics Truck	2	97	Diesel
2233	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2233	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2233	Reach 6	Pickup, 3/4T, 2wd	1	3	Gasoline
2233	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2233	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2233	Reach 6	Truck, Water, 4 mgal, Hwy	1	8	Diesel
2303	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2303	Reach 6	Mechanics Truck	2	97	Diesel
2303	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2303	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2303	Reach 6	Pickup, 3/4T, 2wd	1	2	Gasoline
2303	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2303	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2303	Reach 6	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2313	Reach 6	Pickup, 1/2T, 2wd	1	28	Gasoline
2313	Reach 6	Pickup, 1/2T, 4wd	1	0	Gasoline
2313	Reach 6	Pickup, 3/4T, 2wd	1	3	Gasoline
2313	Reach 6	Truck, End Dump, 10-13cy, Hwy	1	4	Diesel
2313	Reach 6	Truck, End Dump, 16-20cy, Hwy	2	181	Diesel
2313	Reach 6	Truck, Flatbed, 2T, Hwy	1	60	Gasoline
2313	Reach 6	Truck, Water, 4 mgal, Hwy	1	32	Diesel
2323	Reach 6	Boom Truck, 8 Tn Boom	1	2	Diesel
2323	Reach 6	Mechanics Truck	2	97	Diesel
2323	Reach 6	Pickup, 1/2T, 2wd	1	5	Gasoline
2323	Reach 6	Pickup, 1/2T, 4wd	7	108	Gasoline
2323	Reach 6	Pickup, 3/4T, 2wd	1	2	Gasoline
2323	Reach 6	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2323	Reach 6	Truck, Tractor, 75000#, 6 x 4	1	38	Diesel
2323	Reach 6	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2333	Reach 6	10 CY HWY TRK RR DMP 10 W DS	1	171	Diesel
2333	Reach 6	10 CY HWY TRK RR DMP 10 W DS	1	171	Diesel
2333	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	72	Diesel
2333	Reach 6	10CY CON MIX TRCK 250 HP DSL	1	72	Diesel
1020	Reaches 123	Boom Truck, 8 Tn Boom	1	50	Diesel
1020	Reaches 123	Pickup, 1/2T, 2wd	1	100	Gasoline
1030	Reaches 123	Mechanics Truck	1	119	Diesel
1030	Reaches 123	Pickup, 1/2T, 4wd	1	119	Gasoline
1030	Reaches 123	Transit Mix Truck, 10cy	2	79	Diesel
1030	Reaches 123	Truck, Flatbed, 10T, Hwy	1	335	Diesel
1040	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	322	Diesel
1060	Reaches 123	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1100	Reaches 123	10CY CON MIX TRCK 250 HP DSL	2	120	Diesel
1140	Reaches 123	Boom Truck, 8 Tn Boom	1	3	Diesel
1140	Reaches 123	Mechanics Truck	1	120	Diesel
1140	Reaches 123	Pickup, 1/2T, 2wd	1	6	Gasoline
1140	Reaches 123	Pickup, 1/2T, 4wd	4	100	Gasoline
1140	Reaches 123	Truck, Flatbed, 10T, Hwy	1	336	Diesel
1140	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	53	Diesel
1160	Reaches 123	10CY CON MIX TRCK 250 HP DSL	4	114	Diesel
1170	Reaches 123	Boom Truck, 8 Tn Boom	1	50	Diesel
1170	Reaches 123	Pickup, 1/2T, 2wd	1	100	Gasoline
1180	Reaches 123	Mechanics Truck	1	119	Diesel
1180	Reaches 123	Pickup, 1/2T, 4wd	1	119	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1180	Reaches 123	Transit Mix Truck, 10cy	2	79	Diesel
1180	Reaches 123	Truck, Flatbed, 10T, Hwy	1	335	Diesel
1190	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	322	Diesel
1200	Reaches 123	Boom Truck, 8 Tn Boom	1	3	Diesel
1200	Reaches 123	Mechanics Truck	1	82	Diesel
1200	Reaches 123	Pickup, 1/2T, 2wd	1	6	Gasoline
1200	Reaches 123	Pickup, 1/2T, 4wd	3	91	Gasoline
1200	Reaches 123	Truck, Flatbed, 10T, Hwy	1	230	Diesel
1200	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	36	Diesel
1220	Reaches 123	10CY CON MIX TRCK 250 HP DSL	4	113	Diesel
1270	Reaches 123	10CY CON MIX TRCK 250 HP DSL	4	114	Diesel
1320	Reaches 123	10CY CON MIX TRCK 250 HP DSL	2	120	Diesel
1330	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	176	Diesel
1330	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	26	Diesel
1340	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	204	Diesel
1340	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	26	Diesel
2033	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2033	Reaches 123	Mechanics Truck	2	97	Diesel
2033	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2033	Reaches 123	Pickup, 1/2T, 4wd	5	117	Gasoline
2033	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2033	Reaches 123	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2033	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	76	Diesel
2033	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2040	Reaches 123	BOOM TRK HRLY DIESEL	1	82	Diesel
2040	Reaches 123	FUEL TRUCK 4000 GAL HR DSL	1	115	Diesel
2040	Reaches 123	MECHANIC TRUCK 2 T HRLY GAS	1	41	Gasoline
2040	Reaches 123	P/UP 1/2 T 2X4 HRLY GAS NML	7	115	Gasoline
2040	Reaches 123	50 T LOWBOW W/ TRACTR HR DSL	1	115	Diesel
2040	Reaches 123	WATER TRK TO 4000 GAL HR DSL	1	115	Diesel
2043	Reaches 123	Boom Truck, 8 Tn Boom	1	13	Diesel
2043	Reaches 123	Mechanics Truck	3	99	Diesel
2043	Reaches 123	Pickup, 1/2T, 2wd	1	33	Gasoline
2043	Reaches 123	Pickup, 1/2T, 4wd	7	106	Gasoline
2043	Reaches 123	Pickup, 3/4T, 2wd	1	1	Gasoline
2043	Reaches 123	Pickup, 3/4T, 4wd	1	0	Gasoline
2043	Reaches 123	Transit Mix Truck, 10cy	1	90	Diesel
2043	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2043	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	87	Diesel
2043	Reaches 123	Truck, Flatbed, 10T, Hwy	3	278	Diesel
2043	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	262	Diesel
2043	Reaches 123	Truck, Water, 4 mgal, Hwy	1	13	Diesel
2050	Reaches 123	Boom Truck, 8 Tn Boom	1	8	Diesel
2050	Reaches 123	Pickup, 1/2T, 2wd	1	21	Gasoline
2050	Reaches 123	Pickup, 1/2T, 4wd	7	109	Gasoline
2050	Reaches 123	Pickup, 3/4T, 2wd	1	1	Gasoline
2050	Reaches 123	Pickup, 3/4T, 4wd	1	1	Gasoline
2050	Reaches 123	Transit Mix Truck, 10cy	1	3	Diesel
2050	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	3	Diesel
2050	Reaches 123	Truck, Flatbed, 2T, Hwy	3	265	Gasoline
2050	Reaches 123	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2053	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	302	Diesel
2060	Reaches 123	Pickup, 1/2T, 2wd	2	83	Gasoline
2060	Reaches 123	Pickup, 1/2T, 4wd	1	10	Gasoline
2060	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	268	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2060	Reaches 123	Truck, Water, 4 mgal, Hwy	1	141	Diesel
2063	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	71	Diesel
2070	Reaches 123	Pickup, 1/2T, 2wd	3	43	Gasoline
2070	Reaches 123	Truck, Flatbed, 2T, Hwy	2	84	Gasoline
2070	Reaches 123	Truck, Water, 4 mgal, Hwy	1	42	Diesel
2073	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2080	Reaches 123	Pickup, 1/2T, 2wd	1	32	Gasoline
2083	Reaches 123	Boom Truck, 8 Tn Boom	1	11	Diesel
2083	Reaches 123	Mechanics Truck	2	98	Diesel
2083	Reaches 123	Pickup, 1/2T, 2wd	1	29	Gasoline
2083	Reaches 123	Pickup, 1/2T, 4wd	5	106	Gasoline
2083	Reaches 123	Pickup, 3/4T, 2wd	1	1	Gasoline
2083	Reaches 123	Pickup, 3/4T, 4wd	1	0	Gasoline
2083	Reaches 123	Transit Mix Truck, 10cy	1	90	Diesel
2083	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2083	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	87	Diesel
2083	Reaches 123	Truck, Flatbed, 10T, Hwy	2	274	Diesel
2083	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	294	Diesel
2083	Reaches 123	Truck, Water, 4 mgal, Hwy	1	13	Diesel
2093	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	318	Diesel
2113	Reaches 123	Pickup, 1/2T, 2wd	1	18	Gasoline
2113	Reaches 123	Truck, End Dump, 16-20cy, Hwy	2	84	Diesel
2113	Reaches 123	Truck, Flatbed, 2T, Hwy	1	47	Gasoline
2113	Reaches 123	Truck, Water, 4 mgal, Hwy	1	17	Diesel
2123	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2123	Reaches 123	Mechanics Truck	2	97	Diesel
2123	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2123	Reaches 123	Pickup, 1/2T, 4wd	5	117	Gasoline
2123	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2123	Reaches 123	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2123	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	76	Diesel
2123	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2133	Reaches 123	Boom Truck, 8 Tn Boom	1	13	Diesel
2133	Reaches 123	Mechanics Truck	3	101	Diesel
2133	Reaches 123	Pickup, 1/2T, 2wd	1	35	Gasoline
2133	Reaches 123	Pickup, 1/2T, 4wd	7	107	Gasoline
2133	Reaches 123	Pickup, 3/4T, 4wd	1	1	Gasoline
2133	Reaches 123	Transit Mix Truck, 10cy	1	106	Diesel
2133	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	9	Diesel
2133	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	149	Diesel
2133	Reaches 123	Truck, Flatbed, 10T, Hwy	3	282	Diesel
2133	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	321	Diesel
2133	Reaches 123	Truck, Water, 4 mgal, Hwy	1	13	Diesel
2153	Reaches 123	10CY CON MIX TRCK 250 HP DSL	2	78	Diesel
2193	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	274	Diesel
2203	Reaches 123	Pickup, 1/2T, 2wd	1	15	Gasoline
2203	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	112	Diesel
2203	Reaches 123	Truck, Flatbed, 2T, Hwy	1	47	Gasoline
2203	Reaches 123	Truck, Water, 4 mgal, Hwy	1	15	Diesel
2213	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2213	Reaches 123	Mechanics Truck	2	97	Diesel
2213	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2213	Reaches 123	Pickup, 1/2T, 4wd	5	117	Gasoline
2213	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2213	Reaches 123	Truck, Flatbed, 10T, Hwy	2	272	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2213	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	76	Diesel
2213	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2233	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2233	Reaches 123	Mechanics Truck	2	97	Diesel
2233	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2233	Reaches 123	Pickup, 1/2T, 4wd	5	117	Gasoline
2233	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2233	Reaches 123	Truck, Flatbed, 10T, Hwy	2	272	Diesel
2233	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	76	Diesel
2233	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2243	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	302	Diesel
2253	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	6	309	Diesel
2253	Reaches 123	10CY CON MIX TRCK 250 HP DSL	2	81	Diesel
2263	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	71	Diesel
2283	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	5	329	Diesel
2283	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	18	Diesel
2303	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2303	Reaches 123	Mechanics Truck	1	120	Diesel
2303	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2303	Reaches 123	Pickup, 1/2T, 4wd	4	100	Gasoline
2303	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2303	Reaches 123	Truck, Flatbed, 10T, Hwy	1	336	Diesel
2303	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	104	Diesel
2303	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2313	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	3	274	Diesel
2323	Reaches 123	Boom Truck, 8 Tn Boom	1	5	Diesel
2323	Reaches 123	Mechanics Truck	1	120	Diesel
2323	Reaches 123	Pickup, 1/2T, 2wd	1	9	Gasoline
2323	Reaches 123	Pickup, 1/2T, 4wd	4	100	Gasoline
2323	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2323	Reaches 123	Truck, Flatbed, 10T, Hwy	1	336	Diesel
2323	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	104	Diesel
2323	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2343	Reaches 123	Boom Truck, 8 Tn Boom	1	4	Diesel
2343	Reaches 123	Mechanics Truck	1	120	Diesel
2343	Reaches 123	Pickup, 1/2T, 2wd	1	8	Gasoline
2343	Reaches 123	Pickup, 1/2T, 4wd	4	100	Gasoline
2343	Reaches 123	Pickup, 3/4T, 2wd	1	3	Gasoline
2343	Reaches 123	Truck, Flatbed, 10T, Hwy	1	336	Diesel
2343	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	104	Diesel
2343	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2363	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	283	Diesel
2363	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	51	Diesel
2373	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	174	Diesel
2373	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	40	Diesel
2393	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	1	271	Diesel
2393	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	54	Diesel
2403	Reaches 123	Boom Truck, 8 Tn Boom	1	8	Diesel
2403	Reaches 123	Mechanics Truck	2	75	Diesel
2403	Reaches 123	Pickup, 1/2T, 2wd	1	23	Gasoline
2403	Reaches 123	Pickup, 1/2T, 4wd	4	101	Gasoline
2403	Reaches 123	Pickup, 3/4T, 4wd	1	1	Gasoline
2403	Reaches 123	Transit Mix Truck, 10cy	1	80	Diesel
2403	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	7	Diesel
2403	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	113	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2403	Reaches 123	Truck, Flatbed, 10T, Hwy	2	211	Diesel
2403	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	266	Diesel
2403	Reaches 123	Truck, Water, 4 mgal, Hwy	1	10	Diesel
2413	Reaches 123	Boom Truck, 8 Tn Boom	1	10	Diesel
2413	Reaches 123	Mechanics Truck	3	88	Diesel
2413	Reaches 123	Pickup, 1/2T, 2wd	1	31	Gasoline
2413	Reaches 123	Pickup, 1/2T, 4wd	6	100	Gasoline
2413	Reaches 123	Pickup, 3/4T, 2wd	1	2	Gasoline
2413	Reaches 123	Pickup, 3/4T, 4wd	1	0	Gasoline
2413	Reaches 123	Transit Mix Truck, 10cy	1	116	Diesel
2413	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	10	Diesel
2413	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	150	Diesel
2413	Reaches 123	Truck, Flatbed, 10T, Hwy	3	246	Diesel
2413	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	261	Diesel
2413	Reaches 123	Truck, Water, 4 mgal, Hwy	1	21	Diesel
2453	Reaches 123	Boom Truck, 8 Tn Boom	1	8	Diesel
2453	Reaches 123	Mechanics Truck	1	114	Diesel
2453	Reaches 123	Pickup, 1/2T, 2wd	1	16	Gasoline
2453	Reaches 123	Pickup, 1/2T, 4wd	2	114	Gasoline
2453	Reaches 123	Pickup, 3/4T, 4wd	1	1	Gasoline
2453	Reaches 123	Transit Mix Truck, 10cy	1	83	Diesel
2453	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	1	Diesel
2453	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	19	Diesel
2453	Reaches 123	Truck, Flatbed, 10T, Hwy	1	320	Diesel
2453	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	194	Diesel
2453	Reaches 123	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2463	Reaches 123	Boom Truck, 8 Tn Boom	1	8	Diesel
2463	Reaches 123	Mechanics Truck	1	114	Diesel
2463	Reaches 123	Pickup, 1/2T, 2wd	1	16	Gasoline
2463	Reaches 123	Pickup, 1/2T, 4wd	2	114	Gasoline
2463	Reaches 123	Pickup, 3/4T, 4wd	1	1	Gasoline
2463	Reaches 123	Transit Mix Truck, 10cy	1	83	Diesel
2463	Reaches 123	Truck, End Dump, 10-13cy, Hwy	1	1	Diesel
2463	Reaches 123	Truck, End Dump, 16-20cy, Hwy	1	19	Diesel
2463	Reaches 123	Truck, Flatbed, 10T, Hwy	1	320	Diesel
2463	Reaches 123	Truck, Tractor, 75000#, 6 x 4	1	194	Diesel
2463	Reaches 123	Truck, Water, 4 mgal, Hwy	1	5	Diesel
2473	Reaches 123	10 CY HWY TRK RR DMP 10 W DS	2	188	Diesel
2473	Reaches 123	10CY CON MIX TRCK 250 HP DSL	1	44	Diesel
1114	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1114	Temporary Power	Line truck - Line Stringing - 115/230kV	1	40	Diesel
1114	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1114	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1115	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1115	Temporary Power	Line truck - Line Stringing - 115/230kV	1	40	Diesel
1115	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1115	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1116	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1116	Temporary Power	Line truck - Line Stringing - 115/230kV	1	40	Diesel
1116	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
1116	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1117	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1117	Temporary Power	Line truck - Line Stringing - 115/230kV	1	40	Diesel
1117	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1117	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1111	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1111	Temporary Power	Line truck - Line Stringing - 34.5 and 69kV	1	40	Diesel
1111	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1111	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1112	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1112	Temporary Power	Line truck - Line Stringing - 34.5 and 69kV	1	40	Diesel
1112	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1112	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
1113	Temporary Power	Concrete truck - Tower Construction - All Lines	1	40	Diesel
1113	Temporary Power	Line truck - Line Stringing - 34.5 and 69kV	1	40	Diesel
1113	Temporary Power	Line truck - Tower Construction - All Lines	1	40	Diesel
1113	Temporary Power	Water truck - Tower Construction - All Lines	1	40	Diesel
51030	Bridges ^b	Pickup, 1/2T, 4wd	12	49	Gasoline
51030	Bridges ^b	Truck, Flatbed, 2T, Hwy	6	138	Gasoline
51050	Bridges ^b	Pickup, 1/2T, 2wd	4	48	Gasoline
51050	Bridges ^b	Pickup, 3/4T, 2wd	1	8	Gasoline
51050	Bridges ^b	Pickup, 1/2T, 4wd	1	28	Gasoline
51050	Bridges ^b	Truck, Water, 4 mgal, Hwy	1	43	Diesel
51050	Bridges ^b	Truck, End Dump, 10-13cy, Hwy	1	19	Diesel
51050	Bridges ^b	Boom Truck, 8 Tn Boom	2	48	Diesel
51060	Bridges ^b	Pickup, 1/2T, 2wd	2	40	Gasoline
51070	Bridges ^b	Truck, Flatbed, 2T, Hwy	1	35	Gasoline
51110	Bridges ^b	Pickup, 3/4T, 2wd	6	49	Gasoline
51110	Bridges ^b	Pickup, 1/2T, 4wd	1	21	Gasoline
51110	Bridges ^b	Pickup, 3/4T, 4wd	3	49	Gasoline
51110	Bridges ^b	Truck, Tractor, 75000#, 6 x 4	6	136	Diesel
51110	Bridges ^b	Transit Mix Truck, 10cy	6	49	Diesel
51120	Bridges ^b	Transit Mix Truck, 10cy	14	48	Diesel
51130	Bridges ^b	Transit Mix Truck, 10cy	20	48	Diesel
51130	Bridges ^b	Boom Truck, 8 Tn Boom	2	34	Diesel
51131	Bridges ^b	Truck, Water, 4 mgal, Hwy	11	128	Diesel
20020	Canals ^b	Pickup, 1/2T, 4wd	52	39	Gasoline
20020	Canals ^b	Truck, Flatbed, 2T, Hwy	6	98	Gasoline
20030	Canals ^b	Boom Truck, 8 Tn Boom	2	28	Diesel
20030	Canals ^b	Pickup, 1/2T, 2wd	3	37	Gasoline
20030	Canals ^b	Pickup, 1/2T, 4wd	1	27	Gasoline
20030	Canals ^b	Pickup, 3/4T, 2wd	1	3	Gasoline
20030	Canals ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
20030	Canals ^b	Transit Mix Truck, 10cy	1	24	Diesel
20030	Canals ^b	Truck, End Dump, 10-13cy, Hwy	1	19	Diesel
20030	Canals ^b	Truck, Flatbed, 2T, Hwy	1	11	Gasoline
20030	Canals ^b	Truck, Water, 4 mgal, Hwy	1	30	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
20035	Canals ^b	Truck, Flatbed, 2T, Hwy	1	50	Gasoline
20040	Canals ^b	Pickup, 1/2T, 2wd	1	20	Gasoline
20050	Canals ^b	Pickup, 1/2T, 2wd	6	43	Gasoline
20050	Canals ^b	Pickup, 3/4T, 4wd	2	29	Gasoline
20050	Canals ^b	Truck, End Dump, 16-20cy, Hwy	6	117	Diesel
20050	Canals ^b	Truck, Flatbed, 10T, Hwy	2	112	Diesel
20050	Canals ^b	Truck, Flatbed, 2T, Hwy	1	14	Gasoline
20050	Canals ^b	Truck, Tractor, 75000#, 6 x 4	4	120	Diesel
20050	Canals ^b	Truck, Water, 4 mgal, Hwy	9	136	Diesel
20110	Canals ^b	Pickup, 1/2T, 4wd	1	29	Gasoline
20110	Canals ^b	Truck, End Dump, 10-13cy, Hwy	2	104	Diesel
20120	Canals ^b	Boom Truck, 8 Tn Boom	1	27	Diesel
20120	Canals ^b	Pickup, 1/2T, 2wd	4	83	Gasoline
20120	Canals ^b	Pickup, 1/2T, 4wd	1	22	Gasoline
20120	Canals ^b	Pickup, 3/4T, 4wd	1	9	Gasoline
20130	Canals ^b	Boom Truck, 8 Tn Boom	1	27	Diesel
20130	Canals ^b	Pickup, 1/2T, 2wd	5	89	Gasoline
20130	Canals ^b	Pickup, 1/2T, 4wd	1	45	Gasoline
20130	Canals ^b	Pickup, 3/4T, 4wd	1	9	Gasoline
20150	Canals ^b	Boom Truck, 8 Tn Boom	1	33	Diesel
20150	Canals ^b	Pickup, 1/2T, 2wd	4	81	Gasoline
20150	Canals ^b	Pickup, 1/2T, 4wd	3	67	Gasoline
20150	Canals ^b	Pickup, 3/4T, 4wd	1	11	Gasoline
20150	Canals ^b	Truck, End Dump, 10-13cy, Hwy	1	261	Diesel
20170	Canals ^b	Truck, Flatbed, 10T, Hwy	2	239	Diesel
20170	Canals ^b	Truck, Water, 4 mgal, Hwy	2	239	Diesel
20210	Canals ^b	Pickup, 1/2T, 4wd	2	27	Gasoline
20210	Canals ^b	Pickup, 3/4T, 4wd	2	38	Gasoline
20210	Canals ^b	Truck, Flatbed, 2T, Hwy	2	86	Gasoline
20210	Canals ^b	Truck, Tractor, 75000#, 6 x 4	5	127	Diesel
20210	Canals ^b	Truck, Water, 4 mgal, Hwy	2	123	Diesel
20220	Canals ^b	Pickup, 1/2T, 2wd	2	34	Gasoline
20220	Canals ^b	Transit Mix Truck, 10cy	3	42	Diesel
20220	Canals ^b	Truck, End Dump, 16-20cy, Hwy	7	124	Diesel
20220	Canals ^b	Truck, Flatbed, 10T, Hwy	1	118	Diesel
20220	Canals ^b	Truck, Water, 4 mgal, Hwy	1	118	Diesel
20230	Canals ^b	Truck, Flatbed, 10T, Hwy	2	84	Diesel
20300	Canals ^b	Truck, Flatbed, 10T, Hwy	2	85	Diesel
20300	Canals ^b	Truck, Flatbed, 2T, Hwy	5	138	Gasoline
20300	Canals ^b	Truck, Water, 4 mgal, Hwy	5	136	Diesel
89030	Siphons ^b	Pickup, 1/2T, 4wd	6	7	Gasoline
89030	Siphons ^b	Truck, Flatbed, 2T, Hwy	2	56	Gasoline
89040	Siphons ^b	Boom Truck, 8 Tn Boom	1	50	Diesel
89040	Siphons ^b	Pickup, 1/2T, 2wd	2	25	Gasoline
89040	Siphons ^b	Pickup, 1/2T, 4wd	1	50	Gasoline
89040	Siphons ^b	Pickup, 3/4T, 4wd	1	50	Gasoline
89040	Siphons ^b	Truck, End Dump, 10-13cy, Hwy	1	140	Diesel
89040	Siphons ^b	Truck, Flatbed, 10T, Hwy	1	140	Diesel
89040	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	1	140	Diesel
89040	Siphons ^b	Truck, Water, 4 mgal, Hwy	1	140	Diesel
89050	Siphons ^b	Boom Truck, 8 Tn Boom	1	50	Diesel
89050	Siphons ^b	Pickup, 1/2T, 2wd	2	25	Gasoline
89050	Siphons ^b	Pickup, 1/2T, 4wd	1	50	Gasoline
89050	Siphons ^b	Pickup, 3/4T, 2wd	1	50	Gasoline
89050	Siphons ^b	Pickup, 3/4T, 4wd	1	50	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
89050	Siphons ^b	Transit Mix Truck, 10cy	1	50	Diesel
89050	Siphons ^b	Truck, End Dump, 10-13cy, Hwy	1	140	Diesel
89050	Siphons ^b	Truck, Flatbed, 2T, Hwy	1	140	Gasoline
89050	Siphons ^b	Truck, Water, 4 mgal, Hwy	1	140	Diesel
89060	Siphons ^b	Pickup, 1/2T, 2wd	2	25	Gasoline
89070	Siphons ^b	Truck, Flatbed, 2T, Hwy	1	112	Gasoline
89111	Siphons ^b	Pickup, 3/4T, 2wd	6	17	Gasoline
89111	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	3	93	Diesel
89112	Siphons ^b	Pickup, 3/4T, 2wd	2	50	Gasoline
89112	Siphons ^b	Pickup, 3/4T, 4wd	1	100	Gasoline
89112	Siphons ^b	Transit Mix Truck, 10cy	1	100	Diesel
89112	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	2	140	Diesel
89112	Siphons ^b	Truck, Water, 4 mgal, Hwy	1	280	Diesel
89120	Siphons ^b	Transit Mix Truck, 10cy	5	10	Diesel
89120	Siphons ^b	Truck, Flatbed, 2T, Hwy	4	35	Gasoline
89130	Siphons ^b	Boom Truck, 8 Tn Boom	1	50	Diesel
89130	Siphons ^b	Pickup, 1/2T, 2wd	1	50	Gasoline
89130	Siphons ^b	Pickup, 3/4T, 4wd	5	10	Gasoline
89130	Siphons ^b	Transit Mix Truck, 10cy	1	50	Diesel
89130	Siphons ^b	Truck, Flatbed, 10T, Hwy	1	140	Diesel
89130	Siphons ^b	Truck, Flatbed, 2T, Hwy	1	140	Gasoline
89130	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	1	140	Diesel
89130	Siphons ^b	Truck, Water, 4 mgal, Hwy	1	140	Diesel
89141	Siphons ^b	Pickup, 3/4T, 2wd	6	17	Gasoline
89141	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	3	93	Diesel
89142	Siphons ^b	Pickup, 3/4T, 2wd	2	50	Gasoline
89142	Siphons ^b	Pickup, 3/4T, 4wd	1	100	Gasoline
89142	Siphons ^b	Transit Mix Truck, 10cy	1	100	Diesel
89142	Siphons ^b	Truck, Tractor, 75000#, 6 x 4	2	140	Diesel
89142	Siphons ^b	Truck, Water, 4 mgal, Hwy	1	280	Diesel
89150	Siphons ^b	Transit Mix Truck, 10cy	4	13	Diesel
89150	Siphons ^b	Truck, Flatbed, 2T, Hwy	3	47	Gasoline
89160	Siphons ^b	Pickup, 3/4T, 4wd	5	10	Gasoline
89160	Siphons ^b	Truck, Flatbed, 10T, Hwy	1	140	Diesel
9004	Dredge ^b	Boom Truck, 8 Tn Boom	1	0	Diesel
9005	Dredge ^b	Boom Truck, 8 Tn Boom	2	31	Diesel
9004	Dredge ^b	Pickup, 1/2T, 2wd	2	25	Gasoline
9005	Dredge ^b	Pickup, 1/2T, 2wd	3	42	Gasoline
9007	Dredge ^b	Pickup, 1/2T, 2wd	3	48	Gasoline
9009	Dredge ^b	Pickup, 1/2T, 2wd	3	42	Gasoline
9003	Dredge ^b	Pickup, 1/2T, 4wd	6	38	Gasoline
9004	Dredge ^b	Pickup, 1/2T, 4wd	1	0	Gasoline
9005	Dredge ^b	Pickup, 1/2T, 4wd	1	19	Gasoline
9007	Dredge ^b	Pickup, 1/2T, 4wd	1	9	Gasoline
9005	Dredge ^b	Pickup, 3/4T, 2wd	1	8	Gasoline
9004	Dredge ^b	Pickup, 3/4T, 4wd	1	3	Gasoline
9005	Dredge ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
9005	Dredge ^b	Transit Mix Truck, 10cy	1	13	Diesel
9004	Dredge ^b	Truck, End Dump, 10-13cy, Hwy	1	2	Diesel
9005	Dredge ^b	Truck, End Dump, 10-13cy, Hwy	1	14	Diesel
9007	Dredge ^b	Truck, End Dump, 10-13cy, Hwy	2	109	Diesel
9004	Dredge ^b	Truck, Flatbed, 10T, Hwy	1	117	Diesel
9003	Dredge ^b	Truck, Flatbed, 2T, Hwy	2	64	Gasoline
9005	Dredge ^b	Truck, Flatbed, 2T, Hwy	1	6	Gasoline
9006	Dredge ^b	Truck, Flatbed, 2T, Hwy	1	35	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
9009	Dredge ^b	Truck, Flatbed, 2T, Hwy	2	81	Gasoline
9004	Dredge ^b	Truck, Tractor, 75000#, 6 x 4	1	23	Diesel
9004	Dredge ^b	Truck, Water, 4 mgal, Hwy	1	8	Diesel
9005	Dredge ^b	Truck, Water, 4 mgal, Hwy	1	40	Diesel
9007	Dredge ^b	Truck, Water, 4 mgal, Hwy	1	115	Diesel
9009	Dredge ^b	Truck, Water, 4 mgal, Hwy	1	40	Diesel
11111	Head of Old River Barrier ^b	Flatbed	1	21	Diesel
11112	Head of Old River Barrier ^b	Flatbed	1	11	Diesel
11113	Head of Old River Barrier ^b	Flatbed	1	52	Diesel
10045	Intermediate Pump Plant ^b	Pickup, 1/2T, 4wd	19	40	Gasoline
10045	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	84	Gasoline
10060	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	2	44	Gasoline
10060	Intermediate Pump Plant ^b	Pickup, 3/4T, 2wd	1	4	Gasoline
10060	Intermediate Pump Plant ^b	Pickup, 1/2T, 4wd	1	29	Gasoline
10060	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
10060	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	7	Gasoline
10060	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	35	Diesel
10060	Intermediate Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	21	Diesel
10060	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	1	16	Diesel
10060	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	44	Diesel
10065	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	97	Gasoline
10085	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	45	Gasoline
10105	Intermediate Pump Plant ^b	Pickup, 1/2T, 4wd	2	35	Gasoline
10105	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	2	26	Gasoline
10105	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	2	109	Diesel
10105	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	2	116	Diesel
10105	Intermediate Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
10110	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	2	37	Gasoline
10110	Intermediate Pump Plant ^b	Pickup, 1/2T, 4wd	1	8	Gasoline
10110	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	6	Gasoline
10110	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	24	Gasoline
10110	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	57	Diesel
10110	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	47	Diesel
10110	Intermediate Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	20	Diesel
10110	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	0	Diesel
10115	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	21	Gasoline
10115	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	8	49	Gasoline
10115	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	5	113	Diesel
10120	Intermediate Pump Plant ^b	Pickup, 3/4T, 2wd	2	46	Gasoline
10120	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	2	27	Gasoline
10120	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	2	129	Diesel
10120	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	3	35	Diesel
10130	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	2	100	Gasoline
10130	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	3	41	Diesel
10135	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	50	Gasoline
10135	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	50	Diesel
10140	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	3	36	Gasoline
10145	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	3	34	Gasoline
10145	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	43	Gasoline
10145	Intermediate Pump Plant ^b	Truck, Flatbed, 10T, Hwy	3	95	Diesel
10145	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	47	Diesel
10150	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	15	Gasoline
10150	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	2	50	Diesel
10155	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	18	Gasoline
10155	Intermediate Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	88	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
10155	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	18	Diesel
10160	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	3	38	Gasoline
10160	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	4	112	Gasoline
10160	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	47	Diesel
10170	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	34	Gasoline
10170	Intermediate Pump Plant ^b	Pickup, 1/2T, 4wd	1	1	Gasoline
10170	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
10170	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	18	Gasoline
10170	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	3	Diesel
10170	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	1	38	Diesel
10170	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	34	Diesel
10200	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	3	Gasoline
10200	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	34	Gasoline
10200	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	2	73	Gasoline
10200	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	4	40	Diesel
10200	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	2	Diesel
10300	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	2	Gasoline
10300	Intermediate Pump Plant ^b	Pickup, 3/4T, 2wd	1	20	Gasoline
10300	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	2	25	Gasoline
10300	Intermediate Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	3	Diesel
10300	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	37	Gasoline
10300	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	17	Diesel
10300	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	97	Diesel
10300	Intermediate Pump Plant ^b	Truck, End Dump, 16-20cy, Hwy	1	64	Diesel
10300	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	1	29	Diesel
10300	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	3	Diesel
10350	Intermediate Pump Plant ^b	Pickup, 1/2T, 2wd	1	39	Gasoline
10350	Intermediate Pump Plant ^b	Pickup, 3/4T, 2wd	1	37	Gasoline
10350	Intermediate Pump Plant ^b	Pickup, 3/4T, 4wd	1	38	Gasoline
10350	Intermediate Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	137	Gasoline
10350	Intermediate Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	5	Diesel
10350	Intermediate Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	77	Diesel
10350	Intermediate Pump Plant ^b	Transit Mix Truck, 10cy	3	42	Diesel
10350	Intermediate Pump Plant ^b	Boom Truck, 8 Tn Boom	1	6	Diesel
6030	Pipelines ^v	Pickup, 1/2T, 4wd	35	49	Gasoline
6040	Pipelines ^v	Boom Truck, 8 Tn Boom	1	1	Diesel
6040	Pipelines ^v	Truck, End Dump, 10-13cy, Hwy	1	8	Diesel
6040	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	105	Diesel
6040	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	36	Diesel
6040	Pipelines ^v	Pickup, 1/2T, 2wd	1	31	Gasoline
6040	Pipelines ^v	Pickup, 1/2T, 4wd	1	1	Gasoline
6040	Pipelines ^v	Pickup, 3/4T, 4wd	1	13	Gasoline
6050	Pipelines ^v	Boom Truck, 8 Tn Boom	1	15	Diesel
6050	Pipelines ^v	Transit Mix Truck, 10cy	1	5	Diesel
6050	Pipelines ^v	Truck, End Dump, 10-13cy, Hwy	1	6	Diesel
6050	Pipelines ^v	Truck, Flatbed, 2T, Hwy	1	2	Gasoline
6050	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	10	Diesel
6050	Pipelines ^v	Pickup, 1/2T, 2wd	1	30	Gasoline
6050	Pipelines ^v	Pickup, 1/2T, 4wd	1	9	Gasoline
6050	Pipelines ^v	Pickup, 3/4T, 2wd	1	1	Gasoline
6050	Pipelines ^v	Pickup, 3/4T, 4wd	1	1	Gasoline
6060	Pipelines ^v	Pickup, 1/2T, 2wd	1	16	Gasoline
6070	Pipelines ^v	Pickup, 3/4T, 4wd	1	1	Gasoline
6110	Pipelines ^v	Truck, End Dump, 10-13cy, Hwy	1	12	Diesel
6110	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	41	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
6110	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	50	Diesel
6110	Pipelines ^v	Pickup, 1/2T, 4wd	1	2	Gasoline
6110	Pipelines ^v	Pickup, 3/4T, 4wd	7	45	Gasoline
6120	Pipelines ^v	Transit Mix Truck, 10cy	1	15	Diesel
6120	Pipelines ^v	Truck, End Dump, 16-20cy, Hwy	1	93	Diesel
6120	Pipelines ^v	Truck, Flatbed, 2T, Hwy	1	10	Gasoline
6120	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	47	Diesel
6120	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	23	Diesel
6120	Pipelines ^v	Pickup, 3/4T, 2wd	1	26	Gasoline
6120	Pipelines ^v	Pickup, 3/4T, 4wd	1	29	Gasoline
6130	Pipelines ^v	Boom Truck, 8 Tn Boom	1	2	Diesel
6130	Pipelines ^v	Transit Mix Truck, 10cy	1	27	Diesel
6130	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	24	Diesel
6130	Pipelines ^v	Truck, Water, 4 mgal, Hwy	6	280	Diesel
6130	Pipelines ^v	Pickup, 1/2T, 2wd	1	2	Gasoline
6130	Pipelines ^v	Pickup, 3/4T, 2wd	1	6	Gasoline
6130	Pipelines ^v	Pickup, 3/4T, 4wd	2	49	Gasoline
6140	Pipelines ^v	Boom Truck, 8 Tn Boom	1	13	Diesel
6140	Pipelines ^v	Transit Mix Truck, 10cy	1	44	Diesel
6140	Pipelines ^v	Truck, End Dump, 16-20cy, Hwy	1	25	Diesel
6140	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	50	Diesel
6140	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	11	Diesel
6140	Pipelines ^v	Pickup, 1/2T, 2wd	1	13	Gasoline
6140	Pipelines ^v	Pickup, 3/4T, 2wd	1	13	Gasoline
6140	Pipelines ^v	Pickup, 3/4T, 4wd	2	29	Gasoline
6150	Pipelines ^v	Boom Truck, 8 Tn Boom	1	2	Diesel
6150	Pipelines ^v	Transit Mix Truck, 10cy	2	44	Diesel
6150	Pipelines ^v	Truck, Flatbed, 10T, Hwy	1	43	Diesel
6150	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	15	Diesel
6150	Pipelines ^v	Pickup, 1/2T, 2wd	1	2	Gasoline
6150	Pipelines ^v	Pickup, 3/4T, 4wd	1	15	Gasoline
6160	Pipelines ^v	Boom Truck, 8 Tn Boom	1	1	Diesel
6160	Pipelines ^v	Transit Mix Truck, 10cy	1	25	Diesel
6160	Pipelines ^v	Truck, Flatbed, 10T, Hwy	1	12	Diesel
6160	Pipelines ^v	Truck, Flatbed, 2T, Hwy	1	1	Gasoline
6160	Pipelines ^v	Truck, Tractor, 75000#, 6 x 4	1	17	Diesel
6160	Pipelines ^v	Truck, Water, 4 mgal, Hwy	1	11	Diesel
6160	Pipelines ^v	Pickup, 1/2T, 2wd	1	1	Gasoline
6160	Pipelines ^v	Pickup, 1/2T, 4wd	1	1	Gasoline
6160	Pipelines ^v	Pickup, 3/4T, 2wd	1	6	Gasoline
6160	Pipelines ^v	Pickup, 3/4T, 4wd	1	19	Gasoline
1045	Pump Plant ^b	Pickup, 1/2T, 4wd	19	39	Gasoline
1045	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	83	Gasoline
1065	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	10	Gasoline
1085	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
2605	Pump Plant ^b	Mechanics Truck	1	79	Diesel
2605	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
2605	Pump Plant ^b	Truck, End Dump, 16-20cy, Hwy	2	221	Diesel
2605	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	221	Diesel
2605	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	32	Gasoline
2605	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	28	Diesel
2610	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	1	Diesel
2610	Pump Plant ^b	Pickup, 1/2T, 2wd	2	76	Gasoline
2610	Pump Plant ^b	Pickup, 1/2T, 4wd	1	16	Gasoline
2610	Pump Plant ^b	Pickup, 3/4T, 4wd	1	5	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
2610	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	40	Diesel
2610	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	49	Gasoline
2610	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	39	Diesel
2610	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	96	Diesel
2615	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	2	272	Diesel
2620	Pump Plant ^b	Pickup, 1/2T, 4wd	1	48	Gasoline
2620	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	30	Diesel
2630	Pump Plant ^b	Pickup, 3/4T, 2wd	1	40	Gasoline
2630	Pump Plant ^b	Transit Mix Truck, 10cy	1	20	Diesel
2630	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	112	Diesel
2635	Pump Plant ^b	Transit Mix Truck, 10cy	2	29	Diesel
2635	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	46	Gasoline
2640	Pump Plant ^b	Pickup, 1/2T, 2wd	4	43	Gasoline
2640	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	110	Diesel
2640	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	60	Diesel
2645	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	26	Diesel
2645	Pump Plant ^b	Pickup, 1/2T, 2wd	2	36	Gasoline
2645	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	7	Diesel
2645	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	121	Gasoline
2645	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	2	Diesel
2650	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	80	Diesel
2655	Pump Plant ^b	Boom Truck, 8 Tn Boom	2	31	Diesel
2655	Pump Plant ^b	Pickup, 1/2T, 2wd	2	31	Gasoline
2665	Pump Plant ^b	Pickup, 3/4T, 4wd	2	47	Gasoline
2670	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
2670	Pump Plant ^b	Pickup, 3/4T, 2wd	1	18	Gasoline
2670	Pump Plant ^b	Pickup, 3/4T, 4wd	1	29	Gasoline
2670	Pump Plant ^b	Transit Mix Truck, 10cy	1	40	Diesel
2670	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	12	Diesel
2670	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	7	Diesel
2675	Pump Plant ^b	Pickup, 3/4T, 2wd	1	15	Gasoline
2675	Pump Plant ^b	Pickup, 3/4T, 4wd	2	44	Gasoline
2675	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	37	Diesel
2675	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	2	Diesel
2680	Pump Plant ^b	Pickup, 3/4T, 2wd	1	8	Gasoline
2680	Pump Plant ^b	Transit Mix Truck, 10cy	1	29	Diesel
2680	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	15	Gasoline
2680	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	42	Diesel
2685	Pump Plant ^b	Pickup, 1/2T, 2wd	1	17	Gasoline
2685	Pump Plant ^b	Pickup, 3/4T, 4wd	1	3	Gasoline
2685	Pump Plant ^b	Transit Mix Truck, 10cy	1	17	Diesel
2685	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	109	Diesel
2685	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	27	Gasoline
2685	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	8	Diesel
3605	Pump Plant ^b	Mechanics Truck	1	65	Diesel
3605	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	56	Diesel
3605	Pump Plant ^b	Truck, End Dump, 16-20cy, Hwy	2	181	Diesel
3605	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	181	Diesel
3605	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	32	Gasoline
3605	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	28	Diesel
3610	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	1	Diesel
3610	Pump Plant ^b	Pickup, 1/2T, 2wd	2	80	Gasoline
3610	Pump Plant ^b	Pickup, 1/2T, 4wd	1	16	Gasoline
3610	Pump Plant ^b	Pickup, 3/4T, 4wd	1	5	Gasoline
3610	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	42	Diesel

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
3610	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	49	Gasoline
3610	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	39	Diesel
3610	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	98	Diesel
3615	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	2	267	Diesel
3620	Pump Plant ^b	Pickup, 1/2T, 4wd	1	39	Gasoline
3620	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	24	Diesel
3630	Pump Plant ^b	Pickup, 3/4T, 2wd	1	40	Gasoline
3630	Pump Plant ^b	Transit Mix Truck, 10cy	1	20	Diesel
3630	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	112	Diesel
3635	Pump Plant ^b	Transit Mix Truck, 10cy	1	37	Diesel
3635	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	40	Gasoline
3640	Pump Plant ^b	Pickup, 1/2T, 2wd	4	43	Gasoline
3640	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	110	Diesel
3640	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	60	Diesel
3645	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	29	Diesel
3645	Pump Plant ^b	Pickup, 1/2T, 2wd	2	40	Gasoline
3645	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	8	Diesel
3645	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	135	Gasoline
3645	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	2	Diesel
3650	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	109	Diesel
3655	Pump Plant ^b	Boom Truck, 8 Tn Boom	2	31	Diesel
3655	Pump Plant ^b	Pickup, 1/2T, 2wd	2	31	Gasoline
3665	Pump Plant ^b	Pickup, 3/4T, 4wd	2	47	Gasoline
3670	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
3670	Pump Plant ^b	Pickup, 3/4T, 2wd	1	18	Gasoline
3670	Pump Plant ^b	Pickup, 3/4T, 4wd	1	29	Gasoline
3670	Pump Plant ^b	Transit Mix Truck, 10cy	1	40	Diesel
3670	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	12	Diesel
3670	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	7	Diesel
3675	Pump Plant ^b	Pickup, 3/4T, 2wd	1	15	Gasoline
3675	Pump Plant ^b	Pickup, 3/4T, 4wd	2	44	Gasoline
3675	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	37	Diesel
3675	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	2	Diesel
3680	Pump Plant ^b	Pickup, 3/4T, 2wd	1	7	Gasoline
3680	Pump Plant ^b	Transit Mix Truck, 10cy	1	26	Diesel
3680	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	15	Gasoline
3680	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	40	Diesel
3685	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
3685	Pump Plant ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
3685	Pump Plant ^b	Transit Mix Truck, 10cy	1	13	Diesel
3685	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	82	Diesel
3685	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	20	Gasoline
3685	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	6	Diesel
5605	Pump Plant ^b	Mechanics Truck	1	52	Diesel
5605	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	45	Diesel
5605	Pump Plant ^b	Truck, End Dump, 16-20cy, Hwy	2	145	Diesel
5605	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	145	Diesel
5605	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	25	Gasoline
5605	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	22	Diesel
5610	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	1	Diesel
5610	Pump Plant ^b	Pickup, 1/2T, 2wd	2	67	Gasoline
5610	Pump Plant ^b	Pickup, 1/2T, 4wd	1	15	Gasoline
5610	Pump Plant ^b	Pickup, 3/4T, 4wd	1	5	Gasoline
5610	Pump Plant ^b	Truck, End Dump, 10-13cy, Hwy	1	36	Diesel
5610	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	49	Gasoline

Sch Act	Feature	Trip Type	Veh/ day	Mi/ day/ veh	Fuel type
5610	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	39	Diesel
5610	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	89	Diesel
5615	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	2	224	Diesel
5620	Pump Plant ^b	Pickup, 1/2T, 4wd	1	43	Gasoline
5620	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	27	Diesel
5630	Pump Plant ^b	Pickup, 3/4T, 2wd	1	40	Gasoline
5630	Pump Plant ^b	Transit Mix Truck, 10cy	1	20	Diesel
5630	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	112	Diesel
5635	Pump Plant ^b	Transit Mix Truck, 10cy	1	36	Diesel
5635	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	40	Gasoline
5640	Pump Plant ^b	Pickup, 1/2T, 2wd	4	43	Gasoline
5640	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	110	Diesel
5640	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	60	Diesel
5645	Pump Plant ^b	Boom Truck, 8 Tn Boom	1	36	Diesel
5645	Pump Plant ^b	Pickup, 1/2T, 2wd	2	49	Gasoline
5645	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	10	Diesel
5645	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	2	82	Gasoline
5645	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	3	Diesel
5650	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	109	Diesel
5655	Pump Plant ^b	Boom Truck, 8 Tn Boom	2	30	Diesel
5655	Pump Plant ^b	Pickup, 1/2T, 2wd	2	30	Gasoline
5665	Pump Plant ^b	Pickup, 3/4T, 4wd	2	47	Gasoline
5670	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
5670	Pump Plant ^b	Pickup, 3/4T, 2wd	1	18	Gasoline
5670	Pump Plant ^b	Pickup, 3/4T, 4wd	1	29	Gasoline
5670	Pump Plant ^b	Transit Mix Truck, 10cy	1	40	Diesel
5670	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	12	Diesel
5670	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	7	Diesel
5675	Pump Plant ^b	Pickup, 3/4T, 2wd	1	15	Gasoline
5675	Pump Plant ^b	Pickup, 3/4T, 4wd	2	44	Gasoline
5675	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	37	Diesel
5675	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	2	Diesel
5680	Pump Plant ^b	Pickup, 3/4T, 2wd	1	3	Gasoline
5680	Pump Plant ^b	Transit Mix Truck, 10cy	1	13	Diesel
5680	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	15	Gasoline
5680	Pump Plant ^b	Truck, Tractor, 75000#, 6 x 4	1	19	Diesel
5685	Pump Plant ^b	Pickup, 1/2T, 2wd	1	13	Gasoline
5685	Pump Plant ^b	Pickup, 3/4T, 4wd	1	2	Gasoline
5685	Pump Plant ^b	Transit Mix Truck, 10cy	1	13	Diesel
5685	Pump Plant ^b	Truck, Flatbed, 10T, Hwy	1	82	Diesel
5685	Pump Plant ^b	Truck, Flatbed, 2T, Hwy	1	20	Gasoline
5685	Pump Plant ^b	Truck, Water, 4 mgal, Hwy	1	6	Diesel

^a Geotechnical explorations would only be conducted for Alternative 4.

^b Feature would only be constructed under certain alternatives.

1 **Table 22B-8. Employee Vehicle Inventory**

Sch Act	Feature	One-Way Trips/Day	Mi/Day
8003	Clifton Court Forebay	122	2,843
8004	Clifton Court Forebay	4	93
8005	Clifton Court Forebay	30	699
8006	Clifton Court Forebay	38	894
8007	Clifton Court Forebay	14	326
8010	Clifton Court Forebay	46	1,072
8012	Clifton Court Forebay	46	1,072
8015	Clifton Court Forebay	44	1,025
8025	Clifton Court Forebay	16	373
8030	Clifton Court Forebay	72	1,678
8040	Clifton Court Forebay	66	1,538
8045	Clifton Court Forebay	54	1,258
8050	Clifton Court Forebay	32	746
8060	Clifton Court Forebay	30	699
8071	Clifton Court Forebay	58	1,351
8073	Clifton Court Forebay	80	1,864
8075	Clifton Court Forebay	34	792
8077	Clifton Court Forebay	28	652
8079	Clifton Court Forebay	70	1,631
8081	Clifton Court Forebay	34	792
8090	Clifton Court Forebay	58	1,351
8092	Clifton Court Forebay	62	1,445
8096	Clifton Court Forebay	86	2,004
8101	Clifton Court Forebay	10	233
8103	Clifton Court Forebay	44	1,025
8111	Clifton Court Forebay	8	186
8113	Clifton Court Forebay	28	652
8121	Clifton Court Forebay	14	326
8123	Clifton Court Forebay	44	1,025
8131	Clifton Court Forebay	12	280
8133	Clifton Court Forebay	24	559
8140	Clifton Court Forebay	14	326
8141	Clifton Court Forebay	42	979
8145	Clifton Court Forebay	14	326
8146	Clifton Court Forebay	46	1,072
AccessRoad	Geotechnical Explorations ^a	14	665
Onland	Geotechnical Explorations ^a	8	280
Overwater	Geotechnical Explorations ^a	8	480
3	Intakes	112	2,363
4	Intakes	98	2,068
5	Intakes	10	211
6	Intakes	12	253
7	Intakes	12	253
201	Intakes	42	886
203	Intakes	58	1,224
205	Intakes	114	2,405
206	Intakes	264	5,570
207	Intakes	38	802
209	Intakes	156	3,292
211	Intakes	54	1,139
213	Intakes	34	717
215	Intakes	24	506
217	Intakes	74	1,561
219	Intakes	220	4,642

Sch Act	Feature	One-Way Trips/Day	Mi/Day
221	Intakes	166	3,503
223	Intakes	90	1,899
225	Intakes	36	760
227	Intakes	82	1,730
229	Intakes	36	760
251	Intakes	6	127
253	Intakes	36	760
254	Intakes	28	591
255	Intakes	54	1,139
257	Intakes	246	5,191
259	Intakes	152	3,207
261	Intakes	60	1,266
301	Intakes	42	886
303	Intakes	46	971
305	Intakes	132	2,785
306	Intakes	210	4,431
307	Intakes	36	760
309	Intakes	218	4,600
311	Intakes	28	591
313	Intakes	18	380
315	Intakes	28	591
317	Intakes	64	1,350
319	Intakes	150	3,165
321	Intakes	158	3,334
323	Intakes	92	1,941
325	Intakes	58	1,224
327	Intakes	74	1,561
329	Intakes	34	717
351	Intakes	6	127
353	Intakes	68	1,435
354	Intakes	28	591
355	Intakes	54	1,139
357	Intakes	246	5,191
359	Intakes	152	3,207
361	Intakes	160	3,376
365	Intakes	80	1,688
367	Intakes	196	4,136
369	Intakes	16	338
371	Intakes	26	549
501	Intakes	42	886
503	Intakes	58	1,224
505	Intakes	112	2,363
506	Intakes	264	5,570
507	Intakes	38	802
509	Intakes	154	3,249
511	Intakes	54	1,139
513	Intakes	36	760
515	Intakes	24	506
517	Intakes	92	1,941
519	Intakes	220	4,642
521	Intakes	164	3,460
523	Intakes	90	1,899
525	Intakes	36	760
527	Intakes	82	1,730
529	Intakes	32	675
551	Intakes	8	169
553	Intakes	36	760

Sch Act	Feature	One-Way Trips/Day	Mi/Day
554	Intakes	54	1,139
555	Intakes	54	1,139
557	Intakes	206	4,347
559	Intakes	152	3,207
561	Intakes	60	1,266
7004	Intermediate Forebay	17	354
7005	Intermediate Forebay	41	872
7006	Intermediate Forebay	1	28
7007	Intermediate Forebay	1	14
7010	Intermediate Forebay	70	1,492
7020	Intermediate Forebay	4	92
7022	Intermediate Forebay	14	301
7035	Intermediate Forebay	73	1,550
7040	Intermediate Forebay	9	184
7050	Intermediate Forebay	5	116
7052	Intermediate Forebay	17	366
7065	Intermediate Forebay	59	1,264
7070	Intermediate Forebay	9	195
9999	Permeant Power	8	175
1020	Reach 7/Combined Pump Plant	6	140
1030	Reach 7/Combined Pump Plant	122	2,843
1040	Reach 7/Combined Pump Plant	14	326
1050	Reach 7/Combined Pump Plant	50	1,165
1060	Reach 7/Combined Pump Plant	38	885
1080	Reach 7/Combined Pump Plant	2	47
1090	Reach 7/Combined Pump Plant	50	1,165
1100	Reach 7/Combined Pump Plant	50	1,165
1140	Reach 7/Combined Pump Plant	26	606
1150	Reach 7/Combined Pump Plant	44	1,025
1280	Reach 7/Combined Pump Plant	68	1,584
1290	Reach 7/Combined Pump Plant	30	699
1300	Reach 7/Combined Pump Plant	50	1,165
1320	Reach 7/Combined Pump Plant	28	652
1330	Reach 7/Combined Pump Plant	14	326
1340	Reach 7/Combined Pump Plant	60	1,398
1360	Reach 7/Combined Pump Plant	30	699
1370	Reach 7/Combined Pump Plant	32	746
1380	Reach 7/Combined Pump Plant	12	280
1480	Reach 7/Combined Pump Plant	32	746
1510	Reach 7/Combined Pump Plant	6	140
1520	Reach 7/Combined Pump Plant	122	2,843
1530	Reach 7/Combined Pump Plant	44	1,025
1540	Reach 7/Combined Pump Plant	14	326
1550	Reach 7/Combined Pump Plant	50	1,165
1560	Reach 7/Combined Pump Plant	38	885
1570	Reach 7/Combined Pump Plant	2	47
1590	Reach 7/Combined Pump Plant	50	1,165
1600	Reach 7/Combined Pump Plant	38	885
1610	Reach 7/Combined Pump Plant	52	1,212
1620	Reach 7/Combined Pump Plant	32	746
1630	Reach 7/Combined Pump Plant	32	746
1640	Reach 7/Combined Pump Plant	14	326
1650	Reach 7/Combined Pump Plant	46	1,072
1660	Reach 7/Combined Pump Plant	30	699
1670	Reach 7/Combined Pump Plant	50	1,165
1690	Reach 7/Combined Pump Plant	32	746
1700	Reach 7/Combined Pump Plant	52	1,212

Sch Act	Feature	One-Way Trips/Day	Mi/Day
1710	Reach 7/Combined Pump Plant	30	699
1720	Reach 7/Combined Pump Plant	54	1,258
1730	Reach 7/Combined Pump Plant	16	373
1740	Reach 7/Combined Pump Plant	32	746
1750	Reach 7/Combined Pump Plant	12	280
1880	Reach 7/Combined Pump Plant	68	1,584
1890	Reach 7/Combined Pump Plant	44	1,025
1970	Reach 7/Combined Pump Plant	76	1,771
1980	Reach 7/Combined Pump Plant	44	1,025
1990	Reach 7/Combined Pump Plant	36	839
2000	Reach 7/Combined Pump Plant	32	746
2010	Reach 7/Combined Pump Plant	12	280
2020	Reach 7/Combined Pump Plant	76	1,771
2021	Reach 7/Combined Pump Plant	44	1,025
2022	Reach 7/Combined Pump Plant	36	839
2023	Reach 7/Combined Pump Plant	32	746
2030	Reach 7/Combined Pump Plant	4	93
2033	Reach 7/Combined Pump Plant	66	1,538
2040	Reach 7/Combined Pump Plant	58	1,351
2043	Reach 7/Combined Pump Plant	138	3,215
2053	Reach 7/Combined Pump Plant	18	419
2060	Reach 7/Combined Pump Plant	92	2,144
2063	Reach 7/Combined Pump Plant	48	1,118
2070	Reach 7/Combined Pump Plant	60	1,398
2073	Reach 7/Combined Pump Plant	34	792
2083	Reach 7/Combined Pump Plant	18	419
2090	Reach 7/Combined Pump Plant	32	746
2093	Reach 7/Combined Pump Plant	48	1,118
2103	Reach 7/Combined Pump Plant	34	792
2110	Reach 7/Combined Pump Plant	44	1,025
2113	Reach 7/Combined Pump Plant	28	652
2123	Reach 7/Combined Pump Plant	64	1,491
2133	Reach 7/Combined Pump Plant	140	3,262
2153	Reach 7/Combined Pump Plant	48	1,118
2173	Reach 7/Combined Pump Plant	26	606
2183	Reach 7/Combined Pump Plant	48	1,118
2213	Reach 7/Combined Pump Plant	62	1,445
2253	Reach 7/Combined Pump Plant	34	792
2283	Reach 7/Combined Pump Plant	34	792
2303	Reach 7/Combined Pump Plant	62	1,445
2313	Reach 7/Combined Pump Plant	138	3,215
2323	Reach 7/Combined Pump Plant	44	1,025
2343	Reach 7/Combined Pump Plant	16	373
2353	Reach 7/Combined Pump Plant	60	1,398
2363	Reach 7/Combined Pump Plant	68	1,584
7507	Reach 7/Combined Pump Plant	102	2,377
7508	Reach 7/Combined Pump Plant	102	2,377
7510	Reach 7/Combined Pump Plant	74	1,724
7512	Reach 7/Combined Pump Plant	70	1,631
7516	Reach 7/Combined Pump Plant	14	326
7517	Reach 7/Combined Pump Plant	12	280
7518	Reach 7/Combined Pump Plant	12	280
7520	Reach 7/Combined Pump Plant	130	3,029
7522	Reach 7/Combined Pump Plant	38	885
7530	Reach 7/Combined Pump Plant	78	1,817
7535	Reach 7/Combined Pump Plant	72	1,678
7540	Reach 7/Combined Pump Plant	32	746

Sch Act	Feature	One-Way Trips/Day	Mi/Day
7705	Reach 7/Combined Pump Plant	74	1,724
7710	Reach 7/Combined Pump Plant	92	2,144
7715	Reach 7/Combined Pump Plant	120	2,796
7725	Reach 7/Combined Pump Plant	50	1,165
7730	Reach 7/Combined Pump Plant	76	1,771
7760	Reach 7/Combined Pump Plant	74	1,724
7765	Reach 7/Combined Pump Plant	92	2,144
7770	Reach 7/Combined Pump Plant	120	2,796
7780	Reach 7/Combined Pump Plant	50	1,165
7785	Reach 7/Combined Pump Plant	76	1,771
7810	Reach 7/Combined Pump Plant	324	7,549
7820	Reach 7/Combined Pump Plant	50	1,165
7830	Reach 7/Combined Pump Plant	16	373
7850	Reach 7/Combined Pump Plant	20	466
7905	Reach 7/Combined Pump Plant	72	1,678
7907	Reach 7/Combined Pump Plant	72	1,678
7910	Reach 7/Combined Pump Plant	10	233
7912	Reach 7/Combined Pump Plant	10	233
7915	Reach 7/Combined Pump Plant	34	792
7917	Reach 7/Combined Pump Plant	34	792
7920	Reach 7/Combined Pump Plant	62	1,445
7922	Reach 7/Combined Pump Plant	62	1,445
7925	Reach 7/Combined Pump Plant	30	699
7930	Reach 7/Combined Pump Plant	98	2,283
7935	Reach 7/Combined Pump Plant	40	932
7940	Reach 7/Combined Pump Plant	36	839
1020	Reach 4	18	383
1030	Reach 4	102	2,173
1140	Reach 4	102	2,173
1170	Reach 4	18	383
1180	Reach 4	102	2,173
1200	Reach 4	44	937
2033	Reach 4	58	1,235
2043	Reach 4	140	2,982
2050	Reach 4	72	1,534
2060	Reach 4	102	2,173
2070	Reach 4	60	1,278
2080	Reach 4	2	43
2113	Reach 4	10	213
2123	Reach 4	58	1,235
2203	Reach 4	14	298
2213	Reach 4	58	1,235
2233	Reach 4	140	2,982
2303	Reach 4	60	1,278
2313	Reach 4	12	256
2323	Reach 4	58	1,235
2343	Reach 4	58	1,235
1020	Reach 4	6	128
1040	Reach 4	18	383
1050	Reach 4	54	1,150
1070	Reach 4	4	85
1100	Reach 4	302	6,433
1110	Reach 4	54	1,150
1120	Reach 4	18	383
1130	Reach 4	34	724
1160	Reach 4	44	937
1170	Reach 4	6	128

Sch Act	Feature	One-Way Trips/Day	Mi/Day
1190	Reach 4	18	383
1210	Reach 4	54	1,150
1220	Reach 4	44	937
1230	Reach 4	54	1,150
1240	Reach 4	18	383
1250	Reach 4	34	724
1260	Reach 4	34	724
1270	Reach 4	44	937
1280	Reach 4	68	1,448
1290	Reach 4	4	85
1310	Reach 4	34	724
1320	Reach 4	40	852
1330	Reach 4	40	852
1340	Reach 4	40	852
1390	Reach 4	14	298
1650	Reach 4	44	937
1660	Reach 4	44	937
1880	Reach 4	68	1,448
1890	Reach 4	64	1,363
2010	Reach 4	10	213
2030	Reach 4	8	170
2040	Reach 4	46	980
2053	Reach 4	18	383
2063	Reach 4	44	937
2073	Reach 4	36	767
2083	Reach 4	18	383
2093	Reach 4	44	937
2110	Reach 4	64	1,363
2193	Reach 4	32	682
2243	Reach 4	18	383
2253	Reach 4	18	383
2263	Reach 4	42	895
2273	Reach 4	42	895
2283	Reach 4	32	682
2293	Reach 4	36	767
2333	Reach 4	42	895
2353	Reach 4	42	895
1015	Reach 5	302	6,644
1030	Reach 5	6	132
1040	Reach 5	18	396
1050	Reach 5	54	1,188
1060	Reach 5	44	968
1070	Reach 5	4	88
1100	Reach 5	40	880
1110	Reach 5	54	1,188
1120	Reach 5	34	748
1130	Reach 5	34	748
1160	Reach 5	44	968
1190	Reach 5	20	440
1210	Reach 5	54	1,188
1220	Reach 5	44	968
1230	Reach 5	54	1,188
1240	Reach 5	34	748
1250	Reach 5	34	748
1260	Reach 5	34	748
1270	Reach 5	44	968
1280	Reach 5	68	1,496

Sch Act	Feature	One-Way Trips/Day	Mi/Day
1290	Reach 5	18	396
1310	Reach 5	34	748
1390	Reach 5	14	308
1650	Reach 5	40	880
1660	Reach 5	40	880
1880	Reach 5	68	1,496
1890	Reach 5	72	1,584
2010	Reach 5	10	220
2020	Reach 5	6	132
2030	Reach 5	6	132
2033	Reach 5	62	1,364
2040	Reach 5	54	1,188
2043	Reach 5	138	3,036
2050	Reach 5	36	792
2053	Reach 5	18	396
2060	Reach 5	26	572
2063	Reach 5	44	968
2070	Reach 5	76	1,672
2073	Reach 5	34	748
2083	Reach 5	18	396
2103	Reach 5	34	748
2110	Reach 5	72	1,584
2113	Reach 5	42	924
2213	Reach 5	62	1,364
2223	Reach 5	62	1,364
2243	Reach 5	44	968
1020	Reach 6	18	396
1020	Reach 6	6	132
1030	Reach 6	74	1,628
1040	Reach 6	18	396
1050	Reach 6	54	1,188
1060	Reach 6	44	968
1070	Reach 6	4	88
1090	Reach 6	70	1,540
1100	Reach 6	20	440
1110	Reach 6	54	1,188
1120	Reach 6	34	748
1130	Reach 6	34	748
1140	Reach 6	80	1,760
1150	Reach 6	34	748
1160	Reach 6	46	1,012
1170	Reach 6	18	396
1170	Reach 6	6	132
1180	Reach 6	74	1,628
1190	Reach 6	18	396
1200	Reach 6	80	1,760
1210	Reach 6	54	1,188
1220	Reach 6	44	968
1250	Reach 6	34	748
1260	Reach 6	34	748
1270	Reach 6	46	1,012
1280	Reach 6	68	1,496
1290	Reach 6	4	88
1310	Reach 6	34	748
1320	Reach 6	32	704
1330	Reach 6	70	1,540
1340	Reach 6	34	748

Sch Act	Feature	One-Way Trips/Day	Mi/Day
1350	Reach 6	34	748
1360	Reach 6	32	704
1390	Reach 6	14	308
1400	Reach 6	72	1,584
1410	Reach 6	72	1,584
1450	Reach 6	36	792
1460	Reach 6	34	748
1650	Reach 6	40	880
1660	Reach 6	40	880
1880	Reach 6	68	1,496
1890	Reach 6	44	968
2010	Reach 6	10	220
2030	Reach 6	4	88
2033	Reach 6	62	1,364
2040	Reach 6	34	748
2043	Reach 6	138	3,036
2050	Reach 6	52	1,144
2053	Reach 6	18	396
2060	Reach 6	38	836
2063	Reach 6	46	1,012
2070	Reach 6	60	1,320
2073	Reach 6	32	704
2080	Reach 6	4	88
2083	Reach 6	18	396
2093	Reach 6	46	1,012
2103	Reach 6	32	704
2110	Reach 6	44	968
2113	Reach 6	28	616
2123	Reach 6	62	1,364
2133	Reach 6	138	3,036
2143	Reach 6	76	1,672
2163	Reach 6	32	704
2173	Reach 6	18	396
2183	Reach 6	44	968
2193	Reach 6	32	704
2203	Reach 6	32	704
2213	Reach 6	62	1,364
2233	Reach 6	62	1,364
2303	Reach 6	62	1,364
2313	Reach 6	10	220
2323	Reach 6	62	1,364
2333	Reach 6	72	1,584
2353	Reach 6	72	1,584
1020	Reaches 123	18	382
1020	Reaches 123	6	127
1030	Reaches 123	102	2,162
1040	Reaches 123	18	382
1050	Reaches 123	54	1,145
1060	Reaches 123	44	933
1070	Reaches 123	4	85
1100	Reaches 123	40	848
1110	Reaches 123	54	1,145
1120	Reaches 123	18	382
1130	Reaches 123	34	721
1140	Reaches 123	40	848
1160	Reaches 123	44	933
1170	Reaches 123	18	382

Sch Act	Feature	One-Way Trips/Day	Mi/Day
1170	Reaches 123	6	127
1180	Reaches 123	102	2,162
1190	Reaches 123	18	382
1200	Reaches 123	28	594
1210	Reaches 123	54	1,145
1220	Reaches 123	44	933
1230	Reaches 123	54	1,145
1240	Reaches 123	12	254
1250	Reaches 123	34	721
1260	Reaches 123	34	721
1270	Reaches 123	44	933
1280	Reaches 123	68	1,442
1290	Reaches 123	4	85
1310	Reaches 123	34	721
1320	Reaches 123	40	848
1330	Reaches 123	40	848
1340	Reaches 123	38	806
1390	Reaches 123	14	297
1650	Reaches 123	46	975
1660	Reaches 123	44	933
1670	Reaches 123	60	1,272
1880	Reaches 123	68	1,442
1890	Reaches 123	62	1,314
1900	Reaches 123	68	1,442
1910	Reaches 123	52	1,102
2010	Reaches 123	6	127
2030	Reaches 123	4	85
2033	Reaches 123	60	1,272
2040	Reaches 123	48	1,018
2043	Reaches 123	136	2,883
2050	Reaches 123	32	678
2053	Reaches 123	18	382
2060	Reaches 123	44	933
2063	Reaches 123	46	975
2070	Reaches 123	60	1,272
2073	Reaches 123	2	42
2080	Reaches 123	6	127
2083	Reaches 123	108	2,290
2093	Reaches 123	14	297
2110	Reaches 123	54	1,145
2113	Reaches 123	10	212
2123	Reaches 123	60	1,272
2133	Reaches 123	156	3,307
2153	Reaches 123	92	1,950
2193	Reaches 123	34	721
2203	Reaches 123	10	212
2213	Reaches 123	60	1,272
2233	Reaches 123	60	1,272
2243	Reaches 123	18	382
2253	Reaches 123	130	2,756
2263	Reaches 123	46	975
2283	Reaches 123	68	1,442
2303	Reaches 123	40	848
2313	Reaches 123	34	721
2323	Reaches 123	40	848
2343	Reaches 123	40	848
2363	Reaches 123	40	848

Sch Act	Feature	One-Way Trips/Day	Mi/Day
2373	Reaches 123	40	848
2393	Reaches 123	50	1,060
2403	Reaches 123	92	1,950
2413	Reaches 123	142	3,010
2453	Reaches 123	72	1,526
2463	Reaches 123	72	1,526
2473	Reaches 123	34	721
1114	Temporary Power	20	426
1115	Temporary Power	20	440
1116	Temporary Power	20	440
1117	Temporary Power	20	466
1111	Temporary Power	23	475
1112	Temporary Power	23	475
1113	Temporary Power	23	475
51030	Bridges ^b	56	1,233
51050	Bridges ^b	95	2,090
51060	Bridges ^b	22	490
51070	Bridges ^b	3	55
51110	Bridges ^b	150	3,280
51120	Bridges ^b	355	7,783
51130	Bridges ^b	779	17,071
51131	Bridges ^b	247	5,417
20020	Canals ^b	146	3,201
20030	Canals ^b	76	1,666
20035	Canals ^b	8	175
20040	Canals ^b	6	132
20050	Canals ^b	142	3,113
20110	Canals ^b	14	307
20120	Canals ^b	158	3,464
20130	Canals ^b	196	4,297
20150	Canals ^b	266	5,832
20170	Canals ^b	96	2,105
20210	Canals ^b	72	1,579
20220	Canals ^b	74	1,622
20230	Canals ^b	26	570
20300	Canals ^b	84	1,842
9003	Dredge ^b	18	424
9004	Dredge ^b	31	718
9005	Dredge ^b	79	1,834
9006	Dredge ^b	3	75
9007	Dredge ^b	80	1,862
9008	Dredge ^b	28	652
9009	Dredge ^b	57	1,331
11111	Head of Old River Barrier ^b	30	658
11112	Head of Old River Barrier ^b	30	658
11113	Head of Old River Barrier ^b	40	877
6030	Pipelines ^b	62	1,308
6040	Pipelines ^b	18	380
6050	Pipelines ^b	24	506
6060	Pipelines ^b	6	127
6070	Pipelines ^b	6	127
6110	Pipelines ^b	146	3,081
6120	Pipelines ^b	50	1,055
6130	Pipelines ^b	70	1,477
6140	Pipelines ^b	104	2,194
6150	Pipelines ^b	252	5,317
6160	Pipelines ^b	66	1,393

Sch Act	Feature	One-Way Trips/Day	Mi/Day
10045	Intermediate Pump Plant ^b	22	465
10060	Intermediate Pump Plant ^b	66	1,414
10065	Intermediate Pump Plant ^b	9	184
10085	Intermediate Pump Plant ^b	14	305
10105	Intermediate Pump Plant ^b	151	3,206
10110	Intermediate Pump Plant ^b	51	1,086
10115	Intermediate Pump Plant ^b	136	2,902
10120	Intermediate Pump Plant ^b	47	991
10130	Intermediate Pump Plant ^b	251	5,340
10135	Intermediate Pump Plant ^b	22	469
10140	Intermediate Pump Plant ^b	47	994
10145	Intermediate Pump Plant ^b	69	1,460
10150	Intermediate Pump Plant ^b	54	1,159
10155	Intermediate Pump Plant ^b	37	788
10160	Intermediate Pump Plant ^b	87	1,861
10170	Intermediate Pump Plant ^b	37	778
10200	Intermediate Pump Plant ^b	204	4,344
10300	Intermediate Pump Plant ^b	82	1,747
10350	Intermediate Pump Plant ^b	157	3,334
1045	Pump Plants ^b	22	464
1065	Pump Plants ^b	2	42
1085	Pump Plants ^b	6	127
2605	Pump Plants ^b	98	2,068
2610	Pump Plants ^b	102	2,152
2615	Pump Plants ^b	64	1,350
2620	Pump Plants ^b	50	1,055
2630	Pump Plants ^b	34	717
2635	Pump Plants ^b	154	3,249
2640	Pump Plants ^b	70	1,477
2645	Pump Plants ^b	36	760
2650	Pump Plants ^b	34	717
2655	Pump Plants ^b	28	591
2665	Pump Plants ^b	36	760
2670	Pump Plants ^b	38	802
2675	Pump Plants ^b	56	1,182
2680	Pump Plants ^b	46	971
2685	Pump Plants ^b	26	549
3605	Pump Plants ^b	82	1,730
3610	Pump Plants ^b	108	2,279
3615	Pump Plants ^b	62	1,308
3620	Pump Plants ^b	44	928
3630	Pump Plants ^b	34	717
3635	Pump Plants ^b	96	2,026
3640	Pump Plants ^b	70	1,477
3645	Pump Plants ^b	40	844
3650	Pump Plants ^b	40	844
3655	Pump Plants ^b	28	591
3665	Pump Plants ^b	36	760
3670	Pump Plants ^b	38	802
3675	Pump Plants ^b	56	1,182
3680	Pump Plants ^b	42	886
3685	Pump Plants ^b	20	422
5605	Pump Plants ^b	66	1,393
5610	Pump Plants ^b	90	1,899
5615	Pump Plants ^b	52	1,097
5620	Pump Plants ^b	48	1,013
5630	Pump Plants ^b	34	717

Sch Act	Feature	One-Way Trips/Day	Mi/Day
5635	Pump Plants ^b	96	2,026
5640	Pump Plants ^b	70	1,477
5645	Pump Plants ^b	48	1,013
5650	Pump Plants ^b	40	844
5655	Pump Plants ^b	28	591
5665	Pump Plants ^b	36	760
5670	Pump Plants ^b	38	802
5675	Pump Plants ^b	56	1,182
5680	Pump Plants ^b	22	464
5685	Pump Plants ^b	20	422
89030	Siphons ^b	21	460
89040	Siphons ^b	36	799
89050	Siphons ^b	74	1,625
89060	Siphons ^b	15	327
89070	Siphons ^b	2	49
89111	Siphons ^b	181	3,979
89112	Siphons ^b	36	788
89120	Siphons ^b	256	5,604
89130	Siphons ^b	48	1,053
89141	Siphons ^b	166	3,632
89142	Siphons ^b	34	756
89150	Siphons ^b	217	4,767
89160	Siphons ^b	29	634

^a Geotechnical explorations would only be conducted for Alternative 4.

^b Feature would only be constructed under certain alternatives.

1

2 Table 22B-9. As-Needed Vehicle Inventory

Sch Act	Feature	One-Way Trips/Day	Mi/Day
Feature	Clifton Court Forebay	20	200
Feature	Intakes	20	200
Feature	Intermediate Forebay	20	200
Feature	Permeant Power	20	200
Feature	Reach 7/Combined Pump Plant	20	200
Feature	Reach 4	20	200
Feature	Reach 5	20	200
Feature	Reach 6	20	200
Feature	Reaches 123	20	200
Feature	Temporary Power	20	200
Feature	Temporary Power	20	200
Feature	Temporary Power	20	200
Feature	Temporary Power	20	200
Feature	Temporary Power	20	200
Feature	Temporary Power	20	200
Feature	Bridges ^a	20	200
Feature	Canals ^a	20	200
Feature	Dredge ^a	20	200
Feature	HORB ^a	20	200
Feature	Pipelines ^a	20	200
Feature	Intermediate Pump Plant ^a	20	200
Feature	Pump Plant ^a	20	200
Feature	Siphons ^a	20	200

^a Feature would only be constructed under certain alternatives.

3

1 **Table 22B-10. Equipment and Material Hauling Inventory**

Trip Type	Feature	One-Way Trips/Day	Mi/Day
Delivery	Clifton Court Forebay	300	19,500
Delivery	Intakes	300	30,000
Delivery	Intermediate Forebay	300	27,000
Delivery	Permeant Power	50	3,250
Delivery	Reach 7/Combined Pump Plant	300	19,500
Delivery	Reach 4	300	27,000
Delivery	Reach 5	300	22,500
Delivery	Reach 6	300	22,500
Delivery	Reaches123	300	30,000
Delivery	Temporary Power	100	9,000
Delivery	Temporary Power	100	7,500
Delivery	Temporary Power	100	7,500
Delivery	Temporary Power	100	6,500
Delivery	Temporary Power	100	10,000
Delivery	Temporary Power	100	10,000
Delivery	Temporary Power	100	10,000
Segment Haul ^a	Bouldin	63	3,457
Segment Haul ^a	Bouldin	63	2,451
Segment Haul ^a	Bouldin	63	1,760
Segment Haul ^a	Clifton Court Forebay	41	3,450
Segment Haul ^a	Clifton Court Forebay	41	1,109
Segment Haul ^a	Intake	9	514
Segment Haul ^a	Intake	9	1,113
Segment Haul ^a	Intake	9	206
Segment Haul ^a	Intermediate Forebay	121	6,660
Segment Haul ^a	Intermediate Forebay	121	11,141
Segment Haul ^a	Intermediate Forebay	121	2,664
Delivery	Geotechnical Explorations ^a	8	120
Delivery	Bridges ^a	300	23700
Delivery	Canals ^a	300	23700
Delivery	Siphons ^a	300	22,500
Delivery	Intermediate Pump Plant ^a	300	33,000
Delivery	Pipelines ^a	300	45,000
Delivery	Pump Plant ^a	300	45,000

^a Geotechnical explorations and segment hauling would only be conducted for Alternative 4.
^b Feature would only be constructed under certain alternatives.

2

3 **Table 22B-11. Helicopter Inventory**

Sch Act	Feature	#/day	Hrs/day/Eq
9999	Permeant Power	2	4
1114	Temporary Power	2	4
1115	Temporary Power	2	4
1116	Temporary Power	2	4
1117	Temporary Power	2	4

4

5 **Table 22B-12. Helicopter Emission Factors (grams per hour)**

Type	ROG	NO _x	CO	PM10	PM2.5	SO ₂	CO ₂	CH ₄	N ₂ O
MD 500D/E	97	10	417	439	439	6	75661	0	2

Source: EDMS

6

1 **Table 22B-13. Maximum Daily and Total Acres and Material (cubic yards) Disturbed**

Sch ID	Feature	Max Daily				Total			
		Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)	Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)
8004g	Clifton Court Forebay	0	240	6	0	0	57,927	1,524	0
8006g	Clifton Court Forebay	0	0	43	0	0	0	43,111	0
8010g	Clifton Court Forebay	7	2,962	83	0	71	737,500	20,670	0
8012g	Clifton Court Forebay	7	2,927	82	0	225	737,500	20,670	0
8015g	Clifton Court Forebay	7	2,591	73	0	29	655,556	18,373	0
8025g	Clifton Court Forebay	7	403	28	4,677	600	612,000	42,000	7,100,000
8030g	Clifton Court Forebay	7	4,486	132	0	60	1,372,667	40,402	0
8040g	Clifton Court Forebay	7	5,193	152	0	56	1,303,334	38,115	0
8045g	Clifton Court Forebay	7	4,154	121	0	46	1,042,666	30,492	0
8050g	Clifton Court Forebay	0	1,136	30	0	0	115,854	3,049	0
8060g	Clifton Court Forebay	0	116	30	0	0	11,584	3,049	0
8090g	Clifton Court Forebay	0	63	35	0	0	6,750	3,800	0
8092g	Clifton Court Forebay	0	409	46	0	0	45,000	5,080	0
8111g	Clifton Court Forebay	0	0	28	0	0	0	3,000	0
8131g	Clifton Court Forebay	0	0	106	0	0	0	11,045	0
8140g	Clifton Court Forebay	0	0	166	0	0	0	17,268	0
205g	Intakes	7	168	18	0	51	51,000	5,400	0
205g	Intakes	0	0	253	0	0	0	76,852	0
206g	Intakes	0	0	104	0	0	0	11,200	0
209g	Intakes	7	8,996	0	0	89	1,439,369	0	0
213g	Intakes	0	0	2,187	0	0	0	87,474	0
253g	Intakes	0	0	8,677	0	0	0	2,186,601	0
305g	Intakes	7	199	24	0	57	51,000	6,171	0
305g	Intakes	0	0	311	0	0	0	79,582	0
306g	Intakes	0	0	81	0	0	0	8,800	0
309g	Intakes	7	8,983	0	0	89	1,437,254	0	0
313g	Intakes	0	0	1,115	0	0	0	75,793	0
353g	Intakes	0	0	16,449	0	0	0	2,105,519	0
365g	Intakes	0	0	324	0	0	0	77,855	0
505g	Intakes	7	109	10	0	57	33,000	3,005	0
505g	Intakes	0	0	160	0	0	0	48,736	0
506g	Intakes	0	0	104	0	0	0	11,200	0
509g	Intakes	7	8,867	0	0	88	1,418,731	0	0
513g	Intakes	0	0	2,249	0	0	0	89,973	0
553g	Intakes	0	0	8,387	0	0	0	1,979,371	0
7004g	Intermediate Forebay	0	690	18	0	0	57,923	1,524	0
7010g	Intermediate Forebay	7	6,594	0	0	150	4,285,810	0	0
7020g	Intermediate Forebay	0	0	51	0	0	0	6,600	0
7050g	Intermediate Forebay	0	0	200	0	0	0	25,951	0
2043g	Reach 7/Combined Pump Plant	7	355	39	0	9	55,000	6,000	0
2060g	Reach 7/Combined Pump Plant	7	7,200	494	0	600	612,000	42,000	0
2133g	Reach 7/Combined Pump Plant	7	484	42	0	10	75,000	6,560	0
2313g	Reach 7/Combined Pump Plant	7	779	2	0	10	155,714	305	0
7510g	Reach 7/Combined Pump Plant	0	3,167	83	0	0	190,000	5,000	0
7530g	Reach 7/Combined Pump Plant	7	4,515	0	0	37	397,320	0	0
7535g	Reach 7/Combined Pump Plant	7	6,522	0	0	26	600,000	0	0
7730g	Reach 7/Combined Pump Plant	0	125	0	0	0	7,500	0	0
7785g	Reach 7/Combined Pump Plant	0	125	0	0	0	7,500	0	0
7820g	Reach 7/Combined Pump Plant	0	0	700	0	0	0	28,000	0
7830g	Reach 7/Combined Pump Plant	0	325	0	0	0	6,500	0	0
7930g	Reach 7/Combined Pump Plant	0	0	15	0	0	0	1,000	0
2043g	Reach 4	7	302	38	0	8	46,833	5,833	0
2050g	Reach 4	2	215	167	0	2	55,000	42,686	0

Sch ID	Feature	Max Daily				Total			
		Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)	Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)
2060g	Reach 4	7	7,318	353	0	650	622,000	30,000	0
2203g	Reach 4	0	0	429	0	0	0	30,000	0
2233g	Reach 4	7	302	38	0	8	46,833	5,833	0
1015g	Reach 5	7	498	64	0	8	43,857	5,652	0
2043g	Reach 5	5	265	35	0	5	41,000	5,500	0
2060g	Reach 5	7	5,071	348	0	310	431,000	29,578	0
1090g	Reach 6	0	90	12	0	0	10,000	1,341	0
1330g	Reach 6	0	90	12	0	0	10,000	1,341	0
1450g	Reach 6	2	1,444	0	0	2	26,000	0	0
1460g	Reach 6	2	1,389	0	0	2	25,000	0	0
2043g	Reach 6	5	265	35	0	5	41,000	5,500	0
2050g	Reach 6	5	476	21	0	5	120,000	5,229	0
2060g	Reach 6	7	7,200	494	0	600	612,000	42,000	0
2133g	Reach 6	5	490	48	0	5	76,000	7,500	0
2313g	Reach 6	3	743	0	0	3	52,000	0	0
2043g	Reaches 123	4	279	36	0	4	21,500	2,750	0
2050g	Reaches 123	2	217	7	0	2	55,000	1,800	0
2060g	Reaches 123	7	7,318	502	0	650	622,000	42,686	0
2083g	Reaches 123	4	279	36	0	4	21,500	2,750	0
2113g	Reaches 123	0	0	500	0	0	0	30,000	0
2133g	Reaches 123	0	353	33	0	0	27,200	2,550	0
2203g	Reaches 123	0	0	333	0	0	0	20,000	0
2403g	Reaches 123	4	211	27	0	4	21,500	2,750	0
2413g	Reaches 123	7	477	64	0	8	41,000	5,500	0
2453g	Reaches 123	0	26	1	0	0	2,857	152	0
2463g	Reaches 123	0	26	1	0	0	2,857	152	0
1114g	Temporary Power	0	0	0	0	179	0	0	0
1115g	Temporary Power	0	0	0	0	112	0	0	0
1116g	Temporary Power	0	0	0	0	112	0	0	0
1117g	Temporary Power	0	0	0	0	112	0	0	0
1111g	Temporary Power	0	0	0	0	112	0	0	0
1112g	Temporary Power	0	0	0	0	112	0	0	0
1113g	Temporary Power	0	0	0	0	112	0	0	0
11111g	Head of Old River Barrier ^a	5	0	0	0	5	0	0	0
11112g	Head of Old River Barrier ^a	5	0	0	0	5	0	0	0
11113g	Head of Old River Barrier ^a	5	0	0	0	5	0	0	0
6040g	Pipelines ^a	0	1,100	71	0	0	52,800	3,429	0
6110g	Pipelines ^a	7	3,636	6,153	0	40	552,720	935,200	0
6120g	Pipelines ^a	0	134	420	0	0	9,128	28,559	0
6130g	Pipelines ^a	0	589	907	0	0	106,080	163,221	0
6140g	Pipelines ^a	0	231	421	0	0	44,391	80,754	0
6150g	Pipelines ^a	0	208	208	0	0	27,440	27,440	0
6160g	Pipelines ^a	0	193	510	0	0	58,000	153,000	0
51110g	Bridges ^a	0	0	21	0	0	0	500	0
51131g	Bridges ^a	0	2,193	0	0	0	70,177	0	0
10105g	Intermediate Pump Plant ^a	7	0	4,625	0	15	0	37,000	0
10110g	Intermediate Pump Plant ^a	0	2,386	0	0	0	315,000	0	0
10115g	Intermediate Pump Plant ^a	0	17,200	6,643	0	0	1,204,000	465,000	0
10200g	Intermediate Pump Plant ^a	0	1,730	520	0	0	166,099	49,905	0
10300g	Intermediate Pump Plant ^a	0	85	303	0	0	45,798	163,500	0
10350g	Intermediate Pump Plant ^a	0	0	501	0	0	0	128,278	0
2605g	Pump Plant ^a	7	0	0	0	16	0	0	0
2610g	Pump Plant ^a	7	6,772	0	0	24	440,168	0	0
2620g	Pump Plant ^a	0	0	2,323	0	0	0	27,877	0
2670g	Pump Plant ^a	0	76	238	0	0	9,128	28,561	0

Sch ID	Feature	Max Daily				Total			
		Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)	Strip (Acres)	Borrow (CY)	Excavate (CY)	Dredging (CY)
2675g	Pump Plant ^a	0	100	150	0	0	4,000	6,000	0
3605g	Pump Plant ^a	7	0	0	0	32	0	0	0
3610g	Pump Plant ^a	7	0	13,188	0	47	0	857,233	0
3620g	Pump Plant ^a	0	4,022	0	0	0	48,264	0	0
3670g	Pump Plant ^a	0	476	152	0	0	57,122	18,256	0
3675g	Pump Plant ^a	0	300	200	0	0	12,000	8,000	0
89040g	Siphons ^a	0	1,810	48	0	0	14,482	381	0
89112g	Siphons ^a	0	0	1,618	0	0	0	218,375	0
89142g	Siphons ^a	0	0	1,681	0	0	0	210,147	0
89160g	Siphons ^a	0	201	0	0	0	18,532	0	0
20050g	Canals ^a	0	2,536	2,536	0	0	1,633,133	1,633,133	0
20110g	Canals ^a	7	0	0	0	9,652	0	0	0
20120g	Canals ^a	0	22,673	30,431	0	0	20,065,379	26,931,635	0
20130g	Canals ^a	0	6,112	45,528	0	0	5,470,370	40,747,507	0
20150g	Canals ^a	7	48,404	16,032	0	16,988	35,238,416	11,671,373	0
20210g	Canals ^a	0	3,665	3,187	0	0	1,891,042	1,644,384	0
20220g	Canals ^a	0	0	2,448	0	0	0	1,263,420	0
9004g	Dredge ^a	0	603	16	0	0	14,482	381	0
9007g	Dredge ^a	7	6,375	438	0	600	612,000	42,000	0
9008g	Dredge ^a	0	11,452	0	0	0	7,100,000	0	0

^a Feature would only be constructed under certain alternatives.

1

2 **Table 22B-14. Earthmoving Emission Factors (pounds per acre and pounds per ton)**

Air District	Grading (lb/ac)		Loading (lb/ton) (12% moisture)		Loading (lb/ton) (40% moisture)	
	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
SMAQMD	1.54	0.17	0.0019	0.0005	0.0017	0.0005
BAAQMD	1.54	0.17	0.0018	0.0005	0.0017	0.0005
SJVAPCD	1.54	0.17	0.0018	0.0005	0.0018	0.0005
61% Reduction (Environmental Commitment)						
SMAQMD	0.60	0.06	0.0007	0.0002	0.0007	0.0002
BAAQMD	0.60	0.06	0.0007	0.0002	0.0007	0.0002
SJVAPCD	0.60	0.06	0.0007	0.0002	0.0007	0.0002

Source: CalEEMod, AP-42

3

1 **Table 22B-15. Maximum Daily and Total Square Feet Paved**

Feature	Square Footage	Max SF Paved/Day
Clifton Court Forebay	3,555	54,000
Intakes	630,850	324,000
Intermediate Forebay	737,227	54,000
Reach 7/Combined Pump Plant	25,000	54,000
Reach 7 ^a	127,976	54,000
Reach 6 ^a	225,272	54,000
Clifton Court Forebay ^a	136,432	54,000
Intakes ^a	2,067,217	57,243
Intermediate Forebay ^a	922,027	54,000
Reach 4 ^a	1,729,980	54,000
Reaches 123 ^a	1,287,240	54,000
Bridge ^a	75,200	54,000
Canal ^a	1,868,627	54,000
Intermediate Pump Plant ^a	8,000	8,000
Pipelines ^a	21,000	21,000

^a Unscaled value for BDCP Alternatives

2

3 **Table 22B-16. Annual Electricity Demand**

Year	Alternative 1A, 2A, 6A	Alternative 7, 8	Alternative 3	Alternative 4	Alternative 5	Alternative 1C, 2C, 6C	Alternative 1B, 2B, 6B	Alternative 9
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	2,829	2,688	2,618	5,518	1,446	1,568	806	368
2019	16,255	15,445	15,040	20,635	8,308	9,008	4,630	2,115
2020	80,318	76,318	74,318	121,701	41,051	44,508	22,878	10,449
2021	213,837	203,188	197,863	319,387	109,294	118,498	60,910	27,820
2022	300,279	285,325	277,848	445,586	153,475	166,400	85,532	39,066
2023	267,305	253,993	247,337	396,550	136,621	148,127	76,140	34,776
2024	278,819	264,934	257,991	410,648	142,506	154,508	79,419	36,274
2025	188,090	178,723	174,040	280,791	96,134	104,230	53,576	24,470
2026	67,151	63,807	62,134	103,456	34,321	37,212	19,127	8,736
2027	12,826	12,187	11,868	23,441	6,555	7,107	3,653	1,669
2028	339	322	314	4,646	173	188	97	44
2029	10	9	9	23	5	6	3	1
Total	1,428,059	1,356,939	1,321,380	2,132,383	729,890	791,359	406,771	185,788

4

1 **Table 22B-17. Electricity Emission Factors**

Pollutant	Value	Unit	Source
CO ₂	0.277	MT/MWh	EPA 2014
CH ₄	0.000013	MT/MWh	EPA 2014
N ₂ O	0.000003	MT/MWh	EPA 2014
SF ₆	0.00000004	MT/MWh	ARB 2014; CEC 2014
NMHC ^b	0.0014	g/kWh	Delucchi 2006
CO	0.0134	g/kWh	Delucchi 2006
NO _x	0.1836	g/kWh	EPA 2014
PM10 ^c	0.0155	g/kWh	Delucchi 2006
SO ₂	0.0775	g/kWh	EPA 2014

MT/MWh = metric tons megawatt-hour

g/kWh = grams per kilowatt-hour

NMHC = non-methane hydrocarbons

^a Neither the EPA nor the University of California, Davis have a published emission factor for SF₆. Statewide SF₆ emissions in 2012 were therefore used to identify an emission factor per megawatt-hour by dividing total SF₆ emissions by the total electricity generation in California (California Air Resources Board 2014 California Energy Commission 2014)

^b Emission factor used to quantify ROG (because ROG only represents a fraction of NMHC, this assumption is conservative).

^c Emission factor used to quantify PM_{2.5} (because PM_{2.5} only represents a fraction of PM₁₀, this assumption is conservative).

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13 California Energy Commission. 2014. Electricity Consumption by County. Available:
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1 **Table 22B-18. Concrete Batching Volumes (cubic yards)**

Feature	Alternative 1A, 2A, 6A	Alternative 7, 8	Alternative 3	Alternative 4	Alternative 5	Alternative 1C, 2C, 6C	Alternative 1B, 2B, 6B	Alternative 9
Intakes	3,144,373	1,882,858	1,261,515	481,558	621,343	3,144,373	3,144,373	5,272,002
Pumping Plants	123,129	73,730	49,399	0	24,331	123,129	123,129	49,399
Intermediate Pumping Plant	273,908	273,908	120,520	0	90,390	260,213	273,908	0
Pipelines	62,183	37,310	34,822	0	16,789	110,064	76,485	0
Tunnels	1,250,595	1,094,271	984,844	664,502	969,211	62,530	625,298	0
Intermediate Forebay	206,846	206,846	206,846	0	206,846	0	0	0
Clifton Court Forebay	125,299	125,299	125,299	222,042	125,299	125,299	125,299	0
Siphons	0	0	0	0	0	394,888	370,632	426,906
Canals	0	0	0	0	0	87,049	80,956	13,928
Bridges	0	0	0	0	0	105,063	79,743	15,009
Dredging	0	0	0	0	0	0	0	510
Offsite Segment Production	0	0	0	3,648,416	0	0	0	0
Total	5,186,333	3,694,221	2,783,244	5,016,518	2,054,209	4,412,607	4,899,821	5,777,754

2

3 **Table 22B-19. Concrete Batching Emission Factors (pounds per cubic yard and pounds per acre per**
 4 **day)**

Batching Activity	PM10		PM2.5		CO2		
	Uncontrolled	Controlled	Uncontrolled	Controlled	3,000 PSI	4,000 PSI	7,500 PSI
Batching (lbs/CY)	0.0279	0.009	0.004	0.001	386	470	812
Stockpile erosion (lb/acre/day)	6.3	1.26	0.945	0.189	-	-	-

Source: EPA 2014; SMAQMD 2011; Nisbet, Marceau, and VanGeem 2002; Slag Cement Association 2013

5 Nisbet, M., Marceau, M., and vanGeem, M. 2002. Environmental Life Cycle Inventory of Portland
 6 Cement Concrete. PCA R&D Serial No. 2137a. July.

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9 Slag Cement Association. 2013. Slag Cement in Concrete. Slag Cement and the Environment, No. 22.

10 U.S. Environmental Protection Agency. 2014. AP-42 Compilation of Air Pollutant Emission Factors,
 11 5th Ed. Available: <<http://www.epa.gov/ttnchie1/ap42/>>. Accessed: February 23, 2015.

1 **Table 22B-20. RPS Adjusted Electricity Emission Factors**

Pollutant	Value	Unit	Source
CO ₂	0.215	MT/MWh	EPA 2014
CH ₄	0.000010	MT/MWh	EPA 2014
N ₂ O	0.000002	MT/MWh	EPA 2014
SF ₆ ^a	0.00000004	MT/MWh	ARB 2014; CEC 2014

MT/MWh = metric tons megawatt-hour

^a SF₆ emissions are not affected by implementation of the RPS.

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9 <<http://ecdms.energy.ca.gov/elecbycounty.aspx>>.

1 **Table 22B-21. Features by Air District and Air Basin (MPTO)**

Feature	Air District		
		Number of exploration holes	Number of exploration holes
Geotech	YSAQMD	0	0%
Geotech	SMAQMD	455	34%
Geotech	SJVAPCD	659	50%
Geotech	BAAQMD	216	16%
		Location of facility (point source)	Location of facility (point source)
Intakes	YSAQMD	0	0%
Intakes	SMAQMD	3	100%
Intakes	SJVAPCD	0	0%
Intakes	BAAQMD	0	0%
		Location of facility (point source)	Location of facility (point source)
Intermediate Forebay	YSAQMD	0	0%
Intermediate Forebay	SMAQMD	1	100%
Intermediate Forebay	SJVAPCD	0	0%
Intermediate Forebay	BAAQMD	0	0%
		Tunnel miles	Tunnel miles
Reach123	YSAQMD	-	0
Reach123	SMAQMD	-	100%
Reach123	SJVAPCD	-	0
Reach123	BAAQMD	-	0
Reach4	YSAQMD	0	0%
Reach4	SMAQMD	7	40%
Reach4	SJVAPCD	11	60%
Reach4	BAAQMD	0	0%
Reach5	YSAQMD	-	0
Reach5	SMAQMD	-	100%
Reach5	SJVAPCD	-	0
Reach5	BAAQMD	-	0
Reach6	YSAQMD	-	0
Reach6	SMAQMD	-	100%
Reach6	SJVAPCD	-	0
Reach6	BAAQMD	-	0
Reach7	YSAQMD	0	0%
Reach7	SMAQMD	0	0%
Reach7	SJVAPCD	16	94%
Reach7	BAAQMD	1	6%
		Location of facility (point source)	Location of facility (point source)
Clifton Court Forebay	YSAQMD	0	0%
Clifton Court Forebay	SMAQMD	0	0%
Clifton Court Forebay	SJVAPCD	0	0%
Clifton Court Forebay	BAAQMD	1	100%
Combined Pumping Plant	YSAQMD	0	0%
Combined Pumping Plant	SMAQMD	0	0%
Combined Pumping Plant	SJVAPCD	0	0%
Combined Pumping Plant	BAAQMD	1	100%
		Line miles	Line miles
Temporary Power 69kV	YSAQMD	0	0%
Temporary Power 69kV	SMAQMD	20	55%
Temporary Power 69kV	SJVAPCD	16	45%
Temporary Power 69kV	BAAQMD	0	0%
Temporary Power 230kV	YSAQMD	0	0%
Temporary Power 230kV	SMAQMD	20	55%
Temporary Power 230kV	SJVAPCD	16	45%
Temporary Power 230kV	BAAQMD	0	0%
Permeant Power 230/500kV	YSAQMD	0	0%
Permeant Power 230/500kV	SMAQMD	0	0%
Permeant Power 230/500kV	SJVAPCD	2	10%
Permeant Power 230/500kV	BAAQMD	16	90%

1 **Table 22B-22. Features by Air District and Air Basin (PTO)**

Feature	Air District	Location of facility (point source)	Location of facility (point source)
Intakes	YSAQMD	0	0%
Intakes	SMAQMD	5	100%
Intakes	SJVAPCD	0	0%
Intakes	BAAQMD	0	0%
Intermediate Forebay	YSAQMD	0	0%
Intermediate Forebay	SMAQMD	1	100%
Intermediate Forebay	SJVAPCD	0	0%
Intermediate Forebay	BAAQMD	0	0%
		Tunnel miles	Tunnel miles
Reach123	YSAQMD	0	0%
Reach123	SMAQMD	10	100%
Reach123	SJVAPCD	0	0%
Reach123	BAAQMD	0	0%
Reach4	YSAQMD	0	0%
Reach4	SMAQMD	5	100%
Reach4	SJVAPCD	0	0%
Reach4	BAAQMD	0	0%
Reach5	YSAQMD	0	0%
Reach5	SMAQMD	0	6%
Reach5	SJVAPCD	6	94%
Reach5	BAAQMD	0	0%
Reach6	YSAQMD	0	0%
Reach6	SMAQMD	0	0%
Reach6	SJVAPCD	6	100%
Reach6	BAAQMD	0	0%
Reach7,8	YSAQMD	0	0%
Reach7,8	SMAQMD	0	0%
Reach7,8	SJVAPCD	9	80%
Reach7,8	BAAQMD	2	20%
		Location of facility (point source)	Location of facility (point source)
Clifton Court Forebay	YSAQMD	0	0%
Clifton Court Forebay	SMAQMD	0	0%
Clifton Court Forebay	SJVAPCD	0	0%
Clifton Court Forebay	BAAQMD	1	100%
		Line miles	Line miles
Temporary Power 69kV	YSAQMD	0	0%
Temporary Power 69kV	SMAQMD	13	51%
Temporary Power 69kV	SJVAPCD	8	33%
Temporary Power 69kV	BAAQMD	4	16%
Permeant Power 230/500kV	YSAQMD	0	0%
Permeant Power 230/500kV	SMAQMD	13	31%
Permeant Power 230/500kV	SJVAPCD	23	55%
Permeant Power 230/500kV	BAAQMD	6	15%
		Location of facility (point source)	Location of facility (point source)
Pumping Plants	YSAQMD	0	0%
Pumping Plants	SMAQMD	5	100%
Pumping Plants	SJVAPCD	0	0%
Pumping Plants	BAAQMD	0	0%
		Pipeline Miles	Pipeline Miles
Pipelines	YSAQMD	0	0%
Pipelines	SMAQMD	5	100%
Pipelines	SJVAPCD	0	0%
Pipelines	BAAQMD	0	0%
		Location of facility (point source)	Location of facility (point source)
Intermediate Pumping Plant	YSAQMD	0	0%
Intermediate Pumping Plant	SMAQMD	1	100%
Intermediate Pumping Plant	SJVAPCD	0	0%
Intermediate Pumping Plant	BAAQMD	0	0%

1 **Table 22B-23. Features by Air District and Air Basin (East)**

Feature	Air District		
		Location of facility (point source)	Location of facility (point source)
Intakes	YSAQMD	0	0%
Intakes	SMAQMD	5	100%
Intakes	SJVAPCD	0	0%
Intakes	BAAQMD	0	0%
		Tunnel miles	Tunnel miles
Tunnels	YSAQMD	0	0%
Tunnels	SMAQMD	1	43%
Tunnels	SJVAPCD	1	52%
Tunnels	BAAQMD	0	5%
		Location of facility (point source)	Location of facility (point source)
Clifton Court Forebay	YSAQMD	0	0%
Clifton Court Forebay	SMAQMD	0	0%
Clifton Court Forebay	SJVAPCD	0	0%
Clifton Court Forebay	BAAQMD	1	100%
		Line miles	Line miles
Temporary Power 69kV	YSAQMD	0	0%
Temporary Power 69kV	SMAQMD	0	0%
Temporary Power 69kV	SJVAPCD	12	86%
Temporary Power 69kV	BAAQMD	2	14%
Permeant Power 230/500kV	YSAQMD	0	0%
Permeant Power 230/500kV	SMAQMD	0	0%
Permeant Power 230/500kV	SJVAPCD	12	75%
Permeant Power 230/500kV	BAAQMD	4	25%
		Location of facility (point source)	Location of facility (point source)
Pumping Plants	YSAQMD	0	0%
Pumping Plants	SMAQMD	5	100%
Pumping Plants	SJVAPCD	0	0%
Pumping Plants	BAAQMD	0	0%
		Pipeline Miles	Pipeline Miles
Pipelines	YSAQMD	0	0%
Pipelines	SMAQMD	3	100%
Pipelines	SJVAPCD	0	0%
Pipelines	BAAQMD	0	0%
		Location of facility (point source)	Location of facility (point source)
Intermediate Pumping Plant	YSAQMD	0	0%
Intermediate Pumping Plant	SMAQMD	0	100%
Intermediate Pumping Plant	SJVAPCD	1	0%
Intermediate Pumping Plant	BAAQMD	0	0%
		Canal Miles	Canal Miles
Canals/Channels	YSAQMD	0	0%
Canals/Channels	SMAQMD	11	26%
Canals/Channels	SJVAPCD	30	73%
Canals/Channels	BAAQMD	0.4	1%
		Number of bridges	Number of bridges
Bridges	YSAQMD	0	0%
Bridges	SMAQMD	5	26%
Bridges	SJVAPCD	14	74%
Bridges	BAAQMD	0	0%
		Number of siphons	Number of siphons
Siphons	YSAQMD	0	0%
Siphons	SMAQMD	1	13%
Siphons	SJVAPCD	7	88%
Siphons	BAAQMD	0	0%

2

1 **Table 22B-24. Features by Air District and Air Basin (West)**

Feature	Air District		
		Location of facility (point source)	Location of facility (point source)
Intakes	YSAQMD	5	100%
Intakes	SMAQMD	0	0%
Intakes	SJVAPCD	0	0%
Intakes	BAAQMD	0	0%
		Tunnel miles	Tunnel miles
Tunnels	YSAQMD	3	20%
Tunnels	SMAQMD	6	38%
Tunnels	SJVAPCD	0	0%
Tunnels	BAAQMD	7	43%
		Location of facility (point source)	Location of facility (point source)
Clifton Court Forebay	YSAQMD	0	0%
Clifton Court Forebay	SMAQMD	0	0%
Clifton Court Forebay	SJVAPCD	0	0%
Clifton Court Forebay	BAAQMD	1	100%
		Line miles	Line miles
Temporary Power 69kV	YSAQMD	6	45%
Temporary Power 69kV	SMAQMD	5	34%
Temporary Power 69kV	SJVAPCD	0	0%
Temporary Power 69kV	BAAQMD	3	21%
Permeant Power 230/500kV	YSAQMD	17	93%
Permeant Power 230/500kV	SMAQMD	0	0%
Permeant Power 230/500kV	SJVAPCD	0	0%
Permeant Power 230/500kV	BAAQMD	1	7%
		Location of facility (point source)	Location of facility (point source)
Pumping Plants	YSAQMD	5	100%
Pumping Plants	SMAQMD	0	0%
Pumping Plants	SJVAPCD	0	0%
Pumping Plants	BAAQMD	0	0%
		Pipeline Miles	Pipeline Miles
Pipelines	YSAQMD	7	100%
Pipelines	SMAQMD	0	0%
Pipelines	SJVAPCD	0	0%
Pipelines	BAAQMD	0	0%
		Location of facility (point source)	Location of facility (point source)
Intermediate Pumping Plant	YSAQMD	1	100%
Intermediate Pumping Plant	SMAQMD	0	0%
Intermediate Pumping Plant	SJVAPCD	0	0%
Intermediate Pumping Plant	BAAQMD	0	0%
		Canal Miles	Canal Miles
Canals/Channels	YSAQMD	16	61%
Canals/Channels	SMAQMD	0	0%
Canals/Channels	SJVAPCD	0	0%
Canals/Channels	BAAQMD	10	39%
		Number of bridges	Number of bridges
Bridges	YSAQMD	6	33%
Bridges	SMAQMD	0	0%
Bridges	SJVAPCD	0	0%
Bridges	BAAQMD	12	67%
		Number of siphons	Number of siphons
Siphons	YSAQMD	3	33%
Siphons	SMAQMD	0	0%
Siphons	SJVAPCD	0	0%
Siphons	BAAQMD	6	67%

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1 **Table 22B-25. Features by Air District and Air Basin (SCO)**

Feature	Air District	Location of facility (point source)	Location of facility (point source)
Intakes	YSAQMD	0	0%
Intakes	SMAQMD	2	100%
Intakes	SJVAPCD	0	0%
Intakes	BAAQMD	0	0%
		Line miles	Line miles
Temporary Power 69kV	YSAQMD	0	0%
Temporary Power 69kV	SMAQMD	4	36%
Temporary Power 69kV	SJVAPCD	7	58%
Temporary Power 69kV	BAAQMD	1	6%
Temporary Power 230kV	YSAQMD	0	0%
Temporary Power 230kV	SMAQMD	0.14	40%
Temporary Power 230kV	SJVAPCD	0.13	36%
Temporary Power 230kV	BAAQMD	0.08	24%
		Location of facility (point source)	Location of facility (point source)
Pumping Plants	YSAQMD	0	0%
Pumping Plants	SMAQMD	0	0%
Pumping Plants	SJVAPCD	2	100%
Pumping Plants	BAAQMD	0	0%
Head of Old River Barrier	YSAQMD	0	0%
Head of Old River Barrier	SMAQMD	0	0%
Head of Old River Barrier	SJVAPCD	1	100%
Head of Old River Barrier	BAAQMD	0	0%
		Canal Miles	Canal Miles
Canals/Channels	YSAQMD	0	0%
Canals/Channels	SMAQMD	0	0%
Canals/Channels	SJVAPCD	0.77	38%
Canals/Channels	BAAQMD	1.29	62%
		Number of bridges	Number of bridges
Bridges	YSAQMD	0	0%
Bridges	SMAQMD	2	50%
Bridges	SJVAPCD	0	0%
Bridges	BAAQMD	2	50%
		Number of siphons	Number of siphons
Siphons/Gates/Barriers	YSAQMD	0	0%
Siphons/Gates/Barriers	SMAQMD	0	0%
Siphons/Gates/Barriers	SJVAPCD	6	67%
Siphons/Gates/Barriers	BAAQMD	3	33%
		Location of dredging	Number of siphons
Dredging	YSAQMD	0	0%
Dredging	SMAQMD	0	0%
Dredging	SJVAPCD	1	50%
Dredging	BAAQMD	1	50%

2

3 **Table 22B-26. Routine O&M Assumptions**

Crew Type	Number of Employees	Vehicles (number)	Equipment (number)
Maintenance	5	Crew Truck (3)	Compressor (1)
		Foreman Truck (1)	Welder (1)
		Supervisor Truck (1)	Generator (1)
Management	3		-
Repair	8	Crew Truck (4)	Backhoe (1)
		Foreman Truck (1)	Compressor (1)
		Dump Truck (1)	Welder (1)
			Generator (1)
Operating	9	Crew Truck (2)	Offroad truck (1)
			-

1 **Table 22B-27. Yearly O&M Assumptions**

O&M Type	Number of Employees	Vehicles (number)	Equipment (number)
Annual Inspections	6 (inspection crew)	Crew truck (2)	Crane (1)
			Compressor (1)
		Electric vehicle (4) ^a	Generator (1)
			Electric ROV (1) ^a
Sediment Removal	11 (sediment crew)	Crew truck (4)	Suction Dredge (1)
		Dump truck (5)	Loader (1)
			Crane (1)
Tunnel Dewatering	18 (inspection crew)	Crew truck (6)	Crane (1)
			Electric Dewater Pumps (5) ^a
			Air pumps (4)
			Skid-steer loader (1)
			Compressor (1)
			Generator (1)
			Man-lift (1)
			Water truck (1)

^a Emissions associated with these vehicles are included in the electricity analysis

2

3 **Table 22B-28. Annual SWP and CVP Pumping Electricity Consumption (GWh per year)**

Alt	SWP (GWh, relative to existing)		CVP (GWh, relative to No Action)
	Early Late	Late Long	Late Long
Alt 1A	1,336	708	167
Alt 1B	1,218	593	167
Alt 1C	1,350	714	167
Alt 2A	669	227	103
Alt 2B	528	89	103
Alt 2C	667	221	103
Alt 3	1,034	425	153
Alt 4 H1	772	310	134
Alt 4 H2	-32	-438	44
Alt 4 (H3)	332	-108	83
Alt 4 H4	-436	-835	-5
Alt 5	137	-400	57
Alt 6A	-1,019	-1,428	-113
Alt 6B	-1,223	-1,605	-113
Alt 6C	-1,042	-1,436	-113
Alt 7	-1,334	-1,663	-113
Alt 8	-2,247	-2,546	-222
Alt 9	-669	-1,006	-11

4

Bay Delta Conservation Plan Health Risk Assessment for Construction Emissions

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Contents

Tables	ii
Figures.....	iii
Acronyms and Abbreviations	iv
Introduction.....	1
Study Area	1
BDCP Corridors and Alternatives	1
Corridors	1
Alternatives	1
Intakes and Diversion Capacity	4
Conveyance Corridor	4
Differences between Alternatives	4
Health Risk Assessment.....	6
Hazard Identification	6
Emission Constituents of Concern.....	7
Exposure Assessment.....	9
Dose Response Evaluation.....	17
Acute Non-cancer Hazard.....	17
Chronic Non-cancer Hazard	17
Cancer Risk.....	18
Respirable Particulate Matter.....	19
Significance Criteria	19
Risk Characterization.....	20
Pipeline Tunnel Option (PTO) Corridor	20
PTO - Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Results	21
PTO - Alternative 4 Results.....	27
East Corridor.....	33
East Corridor - Alternative 1B and 6B Results.....	33
West Corridor.....	40
West Corridor - Alternative 1C, 2C, and 6C Results.....	40
Separate Corridors Option (SCO).....	46
SCO - Alternative 9 Results.....	46
References.....	52

Tables

Table 1. Conveyance Alternatives by EIR/EIS Alternative Number	3
Table 2. Conveyance Alternatives by Conveyance Corridor.....	3
Table 3. Substances in Diesel Exhaust Listed by the CARB as Toxic Air Contaminants	8
Table 4. Meteorological Data Summary	12
Table 5. Adjusted Inhalation Dose Factor for Each Construction Year	19
Table 6. Air District Thresholds of Significance ^a	20
Table 7. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in YSAQMD	21
Table 8. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in SMAQMD.....	21
Table 9. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in SJVAPCD	22
Table 10. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in BAAQMD.....	22
Table 11. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in YSAQMD ...	23
Table 12. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in SMAQMD...	23
Table 13. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in SJVAPCD ...	24
Table 14. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in BAAQMD...	24
Table 15. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in YSAQMD	25
Table 16. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in SMAQMD....	25
Table 17. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in SJVAPCD	26
Table 18. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in BAAQMD	26
Table 19. Alternative 4 Chronic and Carcinogenic Health Risk Results in YSAQMD	27
Table 20. Alternative 4 Chronic and Carcinogenic Health Risk Results in SMAQMD.....	27
Table 21. Alternative 4 Chronic and Carcinogenic Health Risk Results in SJVAPCD	28
Table 22. Alternative 4 Chronic and Carcinogenic Health Risk Results in BAAQMD.....	28
Table 23. Alternative 4 PM2.5 Concentration Results in YSAQMD.....	29
Table 24. Alternative 4 PM2.5 Concentration Results in SMAQMD	29
Table 25. Alternative 4 PM2.5 Concentration Results in SJVAPCD.....	30
Table 26. Alternative 4 PM2.5 Concentration Results in BAAQMD	30
Table 27. Alternative 4 PM10 Concentration Results in YSAQMD.....	31
Table 28. Alternative 4 PM10 Concentration Results in SMAQMD	31
Table 29. Alternative 4 Mitigated PM10 Concentration Results in SMAQMD.....	32
Table 30. Alternative 4 PM10 Concentration Results in SJVAPCD.....	32
Table 31. Alternative 4 PM10 Concentration Results in BAAQMD	33
Table 32. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in YSAQMD33	
Table 33. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in SMAQMD	34
Table 34. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in SJVAPCD34	
Table 35. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in BAAQMD	35

Table 36. Alternative 1B and 6B PM2.5 Concentration Results in YSAQMD.....	36
Table 37. Alternative 1B and 6B PM2.5 Concentration Results in SMAQMD	36
Table 38. Alternative 1B and 6B PM2.5 Concentration Results in SJVAPCD.....	37
Table 39. Alternative 1B and 6B PM2.5 Concentration Results in BAAQMD	37
Table 40. Alternative 1B and 6B PM10 Concentration Results in YSAQMD.....	38
Table 41. Alternative 1B and 6B PM10 Concentration Results in SMAQMD	38
Table 42. Alternative 1B and 6B PM10 Concentration Results in SJVAPCD.....	39
Table 43. Alternative 1B and 6B PM10 Concentration Results in BAAQMD	39
Table 44. Alternatives 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in YSAQMD	40
Table 45. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in SMAQMD.....	41
Table 46. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in SJVAPCD	41
Table 47. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in BAAQMD.....	42
Table 48. Alternatives 1C, 2C, and 6C PM2.5 Concentration Results in YSAQMD	42
Table 49. Alternatives 1C, 2C, and 6C PM2.5 Concentration Results in SMAQMD.....	43
Table 50. Alternatives 1C, 2C, and 6C PM2.5 Concentration Results in SJVAPCD	43
Table 51. Alternatives 1C, 2C and 6C PM2.5 Concentration Results in BAAQMD	44
Table 52. Alternatives 1C, 2C, and 6C PM10 Concentration Results in YSAQMD	44
Table 53. Alternatives 1C, 2C, and 6C PM10 Concentration Results in SMAQMD.....	45
Table 54. Alternatives 1C, 2C and 6C PM10 Concentration Results in SJVAPCD	45
Table 55. Alternatives 1C, 2C and 6C PM10 Concentration Results in BAAQMD.....	46
Table 56. Alternative 9 Chronic and Carcinogenic Health Risk Results in SMAQMD.....	46
Table 57. Alternative 9 Chronic and Carcinogenic Health Risk Results in SJVAPCD	47
Table 58. Alternative 9 Chronic and Carcinogenic Health Risk Results in BAAQMD.....	47
Table 59. Alternative 9 PM2.5 Concentration Results in SMAQMD	48
Table 60. Alternative 9 PM2.5 Concentration Results in SJVAPCD.....	49
Table 61. Alternative 9 PM2.5 Concentration Results in BAAQMD	49
Table 62. Alternative 9 PM10 Concentration Results in SMAQMD	50
Table 63. Alternative 9 PM10 Concentration Results in SJVAPCD.....	50
Table 64. Alternative 9 PM10 Concentration Results in BAAQMD	51

Figures

Figure 1. Project Study Area with Corridors	2
Figure 2. Intake Locations	5
Figure 3. Wind Rose for Sacramento Executive Airport.....	13
Figure 4. Wind Rose for Stockton Metropolitan Airport.....	14
Figure 5. Wind Rose for Contra Costa Power Plant	15

Acronyms and Abbreviations

AERMOD	American Meteorological Society/United States Environmental Protection Agency Regulatory Improvement Committee (AERMIC) Model
BAAQMD	Bay Area Air Quality Management District
BDCP	Bay Delta Conservation Plan
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CRAF	cancer risk adjustment factor
CVP	Central Valley Project
Delta	Sacramento-San Joaquin River Delta
DEM	digital elevation model
DPM	diesel particulate matter
ED	exposure duration
EIR	environmental impact report
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
GIS	geographic information system
HI	hazard index
HQ	hazard quotient
HRA	health risk assessment
MEI	maximally exposed individual
met	meteorological
OEHHA	Office of Environmental Health Hazard Assessment
PM10	particulate matter 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
PTO	Pipeline/Tunnel Option
REL	reference exposure level
SCO	Separate Corridors Option
SJVAPCD	San Joaquin Valley Air Pollution Control District

SMAQMD	Sacramento Metropolitan Air Quality Management District
SR	State Route
SWP	State Water Project
TAC	toxic air contaminant
URS	URS Corporation Americas, Inc. (Acquired by AECOM)
USGS	United States Geological Service
YSAQMD	Yolo-Solano Air Quality Management District
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter

Introduction

This health risk assessment (HRA) was developed in support of Chapter 22, Air Quality and Greenhouse Gases, of the Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS). This HRA evaluates the human health risks resulting from construction emissions produced by each of 15 water conveyance alternatives proposed in the BDCP.

Study Area

Figure 1 shows the HRA project study area, which is bounded by the Sacramento River Deep Water Ship Channel and Sacramento River to the west, by Interstate 5 to the east, by the town of Clarksburg to the north, and by the Banks and Jones pumping plants to the south.

BDCP Corridors and Alternatives

Corridors

Four water conveyance corridors have been identified within the study area. Shown in Figure 1, these corridors include the Pipeline/Tunnel Option (PTO), the East Option, the West Option, and the Separate Corridors Option (SCO).

Alternatives

Each corridor option includes one or more alternatives. Many of the alternatives within each corridor differ only in the number and location of intakes, which are located at the northern end of the study area. Table 1 shows the 15 conveyance alternatives sorted by EIR/EIS alternative number. Table 2 shows the same 15 conveyance alternatives sorted by conveyance corridor.

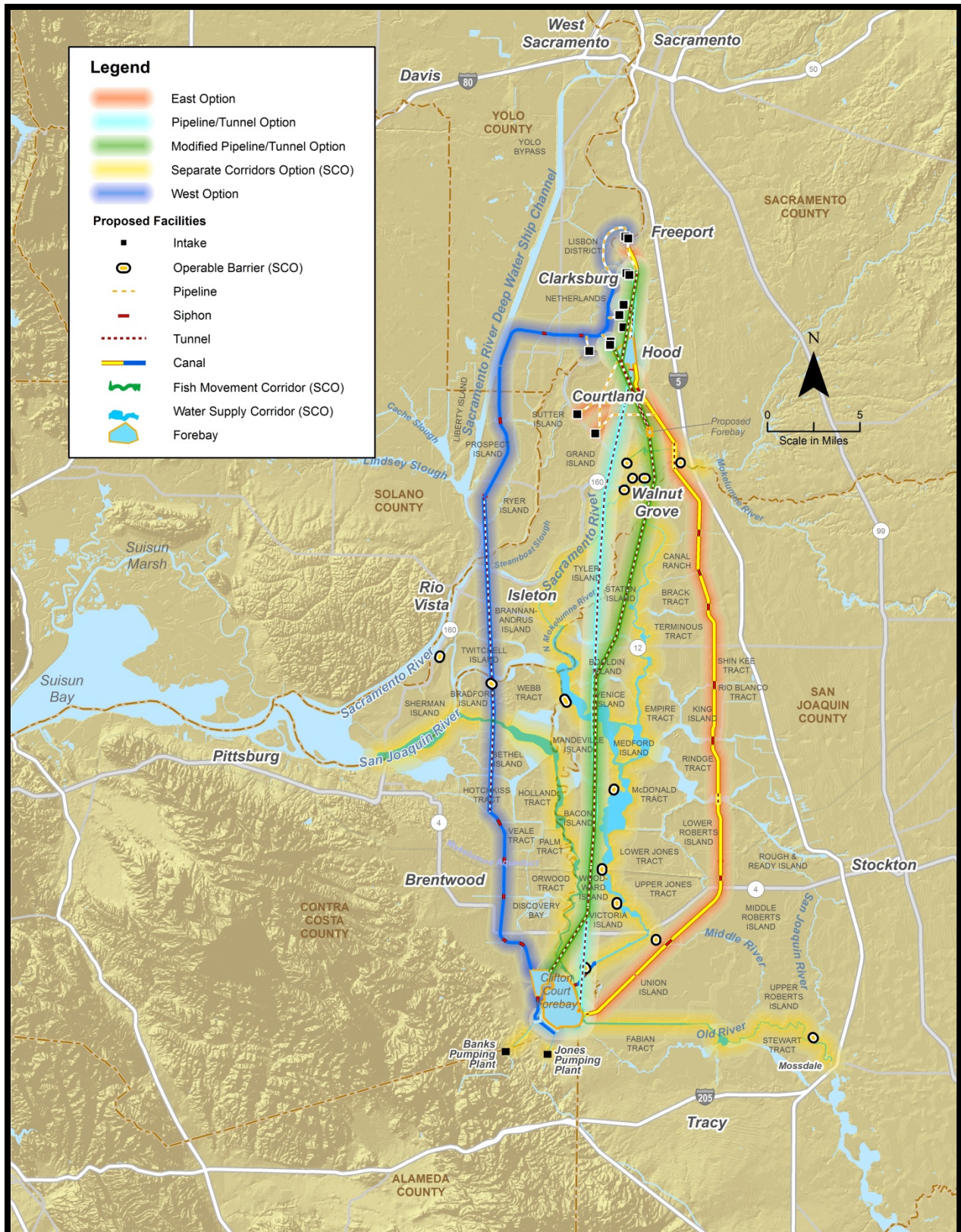


Figure 1. Project Study Area with Corridors

Table 1. Conveyance Alternatives by EIR/EIS Alternative Number

Alternative Number	Conveyance Corridor	Intake Number	North Delta Diversion Capacity (cfs)
1A	Pipeline/Tunnel	1,2,3,4,5	15,000
1B	East Option	1,2,3,4,5	15,000
1C	West Option	West side intakes (1,2,3,4,5)	15,000
2A	Pipeline/Tunnel	1,2,3,4,5 (or 1,2,3,6,7)	15,000
2B	East Option	1,2,3,4,5 (or 1,2,3,6,7)	15,000
2C	West Option	West side intakes (1,2,3,4,5)	15,000
3	Pipeline/Tunnel	1,2	6,000
4	Pipeline/Tunnel	2, 3, 5	9,000
5	Pipeline/Tunnel	1	3,000
6A	Pipeline/Tunnel	1,2,3,4,5	15,000
6B	East Option	1,2,3,4,5	15,000
6C	West Option	West side intakes (1,2,3,4,5)	15,000
7	Pipeline/Tunnel	2, 3, 5	9,000
8	Pipeline/Tunnel	2, 3, 5	9,000
9	Separate Corridors	No intakes, Diversions at Delta Cross Channel and Georgiana Slough	15,000

cfs = cubic feet per second

EIR = environmental impact report

EIS = environmental impact statement

Table 2. Conveyance Alternatives by Conveyance Corridor

Alternative Number	Conveyance Corridor	Intake Number	North Delta Diversion Capacity (cfs)
1A	Pipeline/Tunnel	1,2,3,4,5	15,000
2A	Pipeline/Tunnel	1,2,3,4,5 (or 1,2,3,6,7)	15,000
3	Pipeline/Tunnel	1,2	6,000
4	Pipeline/Tunnel	2, 3, 5	9,000
5	Pipeline/Tunnel	1	3,000
6A	Pipeline/Tunnel	1,2,3,4,5	15,000
7	Pipeline/Tunnel	2, 3, 5	9,000
8	Pipeline/Tunnel	2, 3, 5	9,000
1B	East Option	1,2,3,4,5	15,000
2B	East Option	1,2,3,4,5 (or 1,2,3,6,7)	15,000
6B	East Option	1,2,3,4,5	15,000
1C	West Option	West side intakes (1,2,3,4,5)	15,000
2C	West Option	West side intakes (1,2,3,4,5)	15,000
6C	West Option	West side intakes (1,2,3,4,5)	15,000
9	Separate Corridors	No intakes, Diversions at Delta Cross Channel and Georgiana Slough	15,000

cfs = cubic feet per second

EIR = environmental impact report

EIS = environmental impact statement

As listed in Tables 1 and 2, the alternatives differ in the number and location of intakes, the diversion capacity, and the conveyance corridor.

Intakes and Diversion Capacity

Except for Alternative 9 (SCO), all alternatives include from one to five intakes located at the northern end of the Sacramento-San Joaquin River Delta (Delta), as shown in Figure 2. The SCO option would not use intakes, but instead would use operable barriers to divert existing Delta flows toward the export facilities located at the southern end of the Delta.

Conveyance Corridor

The type of conveyance corridor has a direct relation to the amount of construction and resulting health risks. The PTO alternatives would transport water using two underground pipelines. Consequently, aboveground emissions associated with construction of the conveyance portion of this option would be limited primarily to underground emissions vented through tunnel air shafts and safe work areas. The East Option consists primarily of a canal that would convey water from the intakes south to the export facilities. The West Option would also consist primarily of canals to convey water, but would also include a tunnel for a portion of the route. The SCO would use existing channels to divert water from the Sacramento River through the Delta to the export facilities. The export facilities include the existing State Water Project (SWP) and federal Central Valley Project (CVP) pumping plants in the south Delta. These are shown in Figure 2 as the Banks Pumping Plant (SWP) and the Jones Pumping Plant (CVP).

Differences between Alternatives

As shown in Tables 1 and 2, there are eight PTO alternatives, three East Option alternatives, three West Option alternatives, and one SCO alternative. The primary construction-related differences between the alternatives within each corridor are the number and location of intakes. Consequently, the primary differences in the health risks within each corridor alternative are associated with these intakes.

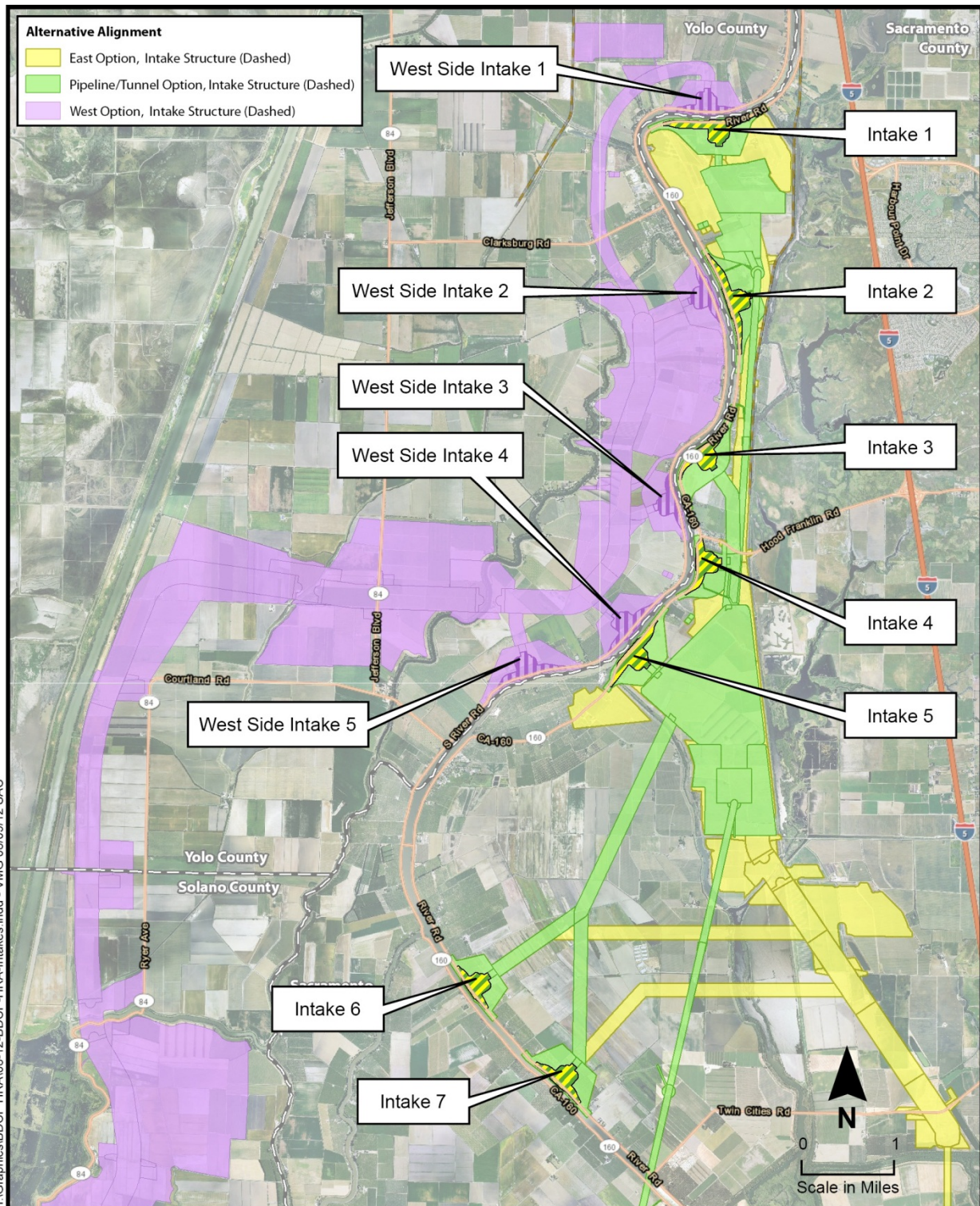


Figure 2. Intake Locations

Health Risk Assessment

This HRA evaluates potential human health risks from the emissions that would be produced by the construction of each alternative. The health risks are evaluated on a local scale at sensitive receptors located near each construction source.

The analysis of the proposed project's health risk impacts is consistent with the guidance and methodologies recommended by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment's (OEHHA) Air Toxic Hot Spots Program Risk Assessment Guidelines (OEHHA, 2003; 2009; 2012). The OEHHA methodology used in this assessment uses a Dose-Response assessment to characterize risk from cancer due to inhaled diesel particulate matter (DPM) and the assessment of chronic non-cancer hazard from DPM. In addition, concentrations of PM10 and PM2.5 (particulate matter 10 and 2.5 microns or less in diameter) were assessed against significance thresholds established by air pollution control districts in which the proposed project would be located.

The evaluation of potential health risks used the standard four-step risk assessment process:

- 1) Hazard Identification
- 2) Exposure Assessment
- 3) Dose-Response Assessment
- 4) Risk Characterization

Each step is described in detail below.

Hazard Identification

This HRA evaluates the human health risks resulting from exposure to construction emission produced by each BDCP alternative. Construction activities generate toxic air contaminants (TACs) that include exhaust emissions from diesel and gasoline fuel combustion. In addition to TAC emissions, this analysis also evaluates PM10 and PM2.5 concentrations resulting from exhaust from both diesel and gasoline engine combustion and from fugitive dust generation.

Figure 1 shows the counties through which each corridor would run. The BDCP alternatives are located within three separate air basins that are under the jurisdiction of four air districts. Portions of the alternatives within Alameda County and Contra Costa County are within the San Francisco Bay Area Air Basin, and are under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Portions of the BDCP alternatives within San Joaquin County are under the jurisdiction of the San Joaquin Valley Air Basin. Portions of the alternatives within Yolo County and Sacramento County are within the Sacramento Valley Air Basin. The Yolo-Solano Air Quality Management District (YSAQMD) has jurisdiction of projects within Yolo County and Solano County, while the Sacramento Metropolitan Air Quality Management District (SMAQMD) has jurisdiction of projects within Sacramento County.

An air quality modeling protocol was used to guide the HRA. To develop the protocol, a preliminary set of dispersion modeling and HRA questions was developed based on a review of existing HRA and modeling guidance issued by state and local agencies (BAAQMD, 2012; California Air Pollution Control Officers Association [CAPCOA], 2009; OEHHA, 2003; San

Joaquin Valley Air Pollution Control District [SJVAPCD], 2006; SJVAPCD, 2012; SMAQMD, 2009; SMAQMD, 2011; YSAQMD, 2007). Separate conference calls were held with each of the four air districts with jurisdiction over the project: BAAQMD; YSAQMD; SMAQMD; and the SJVAPCD.

During the conference calls with each air district, AECOM. posed several questions regarding the type of HRA preferred by the district, along with the pollutants of concern, and the best approaches and assumptions to be included in the modeling analysis and HRA (Jones, M., 2012; Huss, K. and R. Dubose, 2012; Martien, P., 2012; Martien, P. and V. Lau, 2012; Villalvazo, L., Siong, P., and D. Barber, 2012). Based on the air district responses, AECOM prepared a draft modeling protocol that described the assumptions to be incorporated into the HRA.

AECOM then distributed the draft modeling protocol to the four air districts for their respective reviews and comments. Based on the responses received, AECOM finalized the protocol. This final modeling protocol describes the assumptions to be used by AECOM in developing the HRA. The protocol is summarized as Appendix A of this report. The protocol includes a number of topics, described below, that cover assumptions associated with dispersion modeling and the HRA.

Emission Constituents of Concern

One issue addressed by the protocol is the air pollutant hazards of most concern. Based on discussions with the four air districts, the pollutants of most concern included DPM, PM10 and PM2.5. DPM was identified as the only TAC of significance from the proposed construction activities (Jones, M., 2012; Huss, K., and R. DuBose, 2012; Martien, P. 2012; Martien, P. and V. Lau; 2012; Villalvazo, L., Siong, P., and D. Barber, 2012). DPM toxicity far outweighs the risk associated with other TACs that would be produced during the construction phase of the project. Consequently, the HRA focuses on the health effects of DPM emissions. PM10 and PM2.5 concentrations produced from construction vehicle exhaust, concrete batch plant operations and soil disturbance during project construction are also analyzed to determine if the project would result in exceedances of significance thresholds established by the air districts.

Diesel Particulates

DPM historically has been used as a surrogate measure of exposure for whole diesel exhaust emissions. Diesel exhaust is a complex mixture of thousands of gases and fine particles (commonly known as soot). Diesel exhaust particles and gases are suspended in the air due to thermal buoyancy and the small size of the particles. The composition of diesel exhaust varies depending on engine type, operating conditions, fuel composition, lubricating oil, and presence of an emission control system. One of the main characteristics of diesel exhaust is the release of particles at a relative rate approximately 20 times greater than from gasoline-fueled vehicles, on an equivalent fuel basis. Diesel particulates are mainly aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small carbon (elemental carbon) particles ranging from 0.01 to 0.08 micron in diameter. The organic fraction consists of soluble organic compounds (soluble organic fraction) (California Air Resource Board [CARB] and OEHHA, 1998). OEHHA classifies DPM as a carcinogen.

DPM Inorganic Fraction

Association between particle size and health effects is of particular relevance to diesel particulates, most of which are smaller than 1 micron in diameter. Approximately 98 percent (by weight) of DPM are coarse particles (PM₁₀), 94 percent are fine particles (PM_{2.5}), and 92 percent are ultrafine particles (PM_{0.1}). Because of their very small sizes, these particles can be inhaled into deep lung tissues and eventually trapped in the bronchial and alveolar regions of the lung (CARB and OEHHA, 1998).

DPM Organic Fraction

DPM has a large surface area that is attributed to the shape and quantity of particulates found in diesel exhaust, which makes DPM an excellent medium for absorbing organics. In 1998, OEHHA completed a comprehensive health assessment of diesel exhaust. The assessment concluded that diesel exhaust contains more than 40 toxic air contaminants (see Table 3). Based on the OEHHA study, in August 1998, CARB identified diesel exhaust as a TAC. In this OEHHA study, researchers identified a new class of potent mutagenic compounds in the organic extracts of DPM called nitrobenzanthrones. Mutagenic compounds cause genetic mutations and contribute to the cancer risk of DPM. The results showed that the mutagenicity of this new class of compounds, specifically 3-nitrobenzanthrone, compared similarly with that of 1,8-dinitropyrene, which is one of the strongest known direct-acting mutagens. Due to the similarities, this new class of compounds is also considered to be one of the strongest known mutagens. This compound and other TACs in DPM contributed to CARB's decision to identify DPM as a TAC. Studies have shown that, depending on the condition of the engine, emissions control equipment, and test cycle, the contribution of organics to the total diesel particulate matter mass could range from 10 to 90 percent, thereby increasing the mutagenic effects of diesel particulate matter (CARB and OEHHA, 1998).

Table 3. Substances in Diesel Exhaust Listed by the CARB as Toxic Air Contaminants

<ul style="list-style-type: none">• Acetaldehyde• Acrolein• Aniline• Antimony compounds• Mercury compounds• Arsenic• Benzene• Beryllium compounds• Biphenyl• bis[2-ethylhexyl]phthalate• 1,3-butadiene• Cadmium• Chlorine• Chlorobenzene	<ul style="list-style-type: none">• Chromium compounds• Cobalt compounds• Cresol isomers• Cyanide compounds• Dioxins and dibenzofurans• Dibutylphthalate• Ethyl benzene• Formaldehyde• Hexane• Inorganic lead• Manganese compounds• Methanol• Methyl ethyl ketone• Naphthalene	<ul style="list-style-type: none">• Nickel• 4-nitrobiphenyl• Phenol• Phosphorus• Polycyclic organic matter, including polycyclic aromatic hydrocarbons and their derivatives• Propionaldehyde• Selenium compounds• Styrene• Toluene• Xylene isomers and mixtures• o-xylenes• m-xylenes• p-xylenes
---	---	---

Source: California Air Resource Board and Office of Environmental Health Hazard Assessment, 1998.

Fine and Coarse Particulate Matter

Fine and coarse particulate matter (PM_{2.5} and PM₁₀, respectively) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Fine particles are derived from a variety of sources, including windblown dust and construction activities. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine

particles (less than or equal to PM_{2.5}). Fine particles can also be formed in the atmosphere through chemical reactions. Coarse particulate matter, particulate matter of 10 microns or smaller (PM₁₀), pose a health concern because they can accumulate in the respiratory system and aggravate health problems, such as asthma. Particulates that are greater than 10 microns are removed from the human body through the mucocilliary system. The United States Environmental Protection Agency's (EPA's) scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects and at concentrations that extend well below those allowed by the current PM₁₀ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease, such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms.

Exposure Assessment

The degree of public exposure to the pollutants of concern – DPM, PM₁₀, and PM_{2.5} – was evaluated under the exposure assessment portion of the HRA. This portion of the analysis estimated the concentrations of DPM, PM₁₀, and PM_{2.5} at sensitive receptors located near the BDCP construction areas. The analysis was conducted by estimating the emissions that would be generated by each alternative's construction areas, and estimating the resulting concentrations at sensitive receptors located near those areas.

Air dispersion models are often used to simulate atmospheric processes for situations where the spatial scale is in the tens of meters to tens of kilometers. Selection of air dispersion models depends on many factors, such as the characteristics of emission sources (point, area, volume, or line), the type of terrain (flat or complex) at the emission source locations, and source-receptor relationships. Air dispersion modeling was used to estimate DPM, PM₁₀, and PM_{2.5} concentrations at sensitive receptors. The American Meteorological Society/EPA Regulatory Improvement Committee model (AERMOD) was used to conservatively estimate concentrations. The AERMOD model was used to conduct detailed modeling, as described below. The use of this model was agreed upon by the four governing air districts.

AERMOD is a steady-state¹, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the release heights of the emission sources (i.e., complex terrain). AERMOD has become a EPA regulatory dispersion model specified in the *EPA Guideline for Air Quality Methods* (Code of Federal Regulations, Title 40, Part 51, Appendix W) (EPA, 2005). AERMOD was used to evaluate the full length of each alternative.

The remaining portion of this section describes the assumptions used to conduct the AERMOD dispersion modeling analysis.

¹ Steady-state means that the model assumes no variability in meteorological parameters over a one-hour time period.

Emission Rates

The air pollutant dispersion modeling conducted as part of the exposure assessment includes project components that will be constructed throughout the entire construction time period and those that will involve a shortened construction duration. Emissions at the north and south ends of the PTO, East, and West corridor alternatives would include stationary construction activities that include intakes, forebays, and supporting activities that would be generally constructed for the entirety of the construction period. In addition, each of these corridors would include linear construction activities – canals and/or underground pipelines – allowing construction to move over time as construction occurs in a linear progression. The emissions produced from all project components along the entire extent of the BDCP were modeled to obtain the total cumulative exposure attributable to the proposed project.

Both daily and annual exposure durations for PM10 and PM2.5 concentrations were also modeled with AERMOD. Daily PM10 and PM2.5 concentrations were modeled for each project component based on the maximum yearly emissions estimated for the project's construction areas. Annual exposure of air pollutants were based on the average yearly emissions generated for each project component. Because both daily and annual air pollutant exposures had to be modeled, two sets of AERMOD modeling were conducted. The first set of AERMOD modeling addressed daily and annual exposure to PM10 and PM2.5 from diesel exhaust. The second set of AERMOD modeling involved assessing the daily and annual concentrations of PM10 and PM2.5 produced from fugitive dust.

The emissions used for the HRA were based on the emissions included in the air quality analysis. Emission sources included within the AERMOD modeling include off-road and on-road vehicles, as well as non-vehicular emission sources such as concrete batch plants and fugitive dust generated during grading/excavation activities. PM10 and PM2.5 emissions from exhaust and fugitive dust were included in the air dispersion modeling.

An emissions profile was developed for each alternative's construction components (e.g., intakes, forebay, bridges, screens, canals, tunnels, tunnel muck areas). Emissions for various sources were estimated to occur eight hours per day during work hours from Monday through Friday. The emission estimates included in the HRA modeling are consistent with the emission estimates for each alternative. Consequently, the HRA is based on emission estimates that account for the project's air quality-related environmental commitments. These environmental commitments are identified in the project's air quality study and include measures to reduce PM10 and PM2.5 exhaust and fugitive dust emissions.

This analysis characterizes health risks from PM10 diesel exhaust emissions (as a surrogate for DPM), as well as PM10 and PM2.5 concentrations from exhaust and fugitive dust emissions for evaluating against local PM thresholds. All dust and exhaust environmental commitments have been accounted for in the emission estimates.

Emissions at the north and south ends of the East, West, and PTO corridor alternatives would include stationary construction activities that involve intakes, forebays, and supporting activities. In addition, each of these corridors would include linear construction activities – canals, pipelines, and tunnels – for which construction would move over time.

Emissions from the various construction phases and components for each alignment were incorporated into the AERMOD model to estimate annual and maximum daily pollutant concentrations. To model annual average pollutant concentrations, the total emissions for each component were averaged over the duration of construction to obtain an average emission rate. To model maximum daily pollutant concentrations, the highest single year emissions for each component was used, and averaged over a single year to obtain a maximum case emission rate.

For area sources (construction area sources), a grams-per-second emission rate for each construction area, or source, divided by the area of the source, was calculated and inputted into AERMOD. For line sources (haul routes), a grams-per-second emission rate for each line source was calculated and inputted into AERMOD.

Emission Source Modeling

The emission rates described above are incorporated within the AERMOD model by assigning them to individual emission source areas. The location and size of the emission source areas are based on the proposed construction areas shown in the BDCP GIS database. The emission sources were modeled in three dimensions with each emission source having length, width, and elevation. Spatially modeling the emission sources is critical in air pollutant dispersion modeling because air pollutants disperse readily over distance to the analyzed receptor locations.

All proposed construction sources, with the exception of haul routes, were modeled as area sources. During consultations with the aforementioned air pollution control districts, the use of area sources to model the emission sources was determined to be an acceptable and conservative approach. Exhaust emissions from construction equipment were modeled using a release height of 5 meters with an initial vertical dispersion height of 1.4 meters, while fugitive dust emissions from construction areas were modeled using a surface release height and an initial vertical spread of 1 meter. The use of a 5-meter release height corresponds to a mid-range of expected plume rise from construction equipment during day-time atmospheric conditions. Dust emissions from concrete batch plant operations were modeled using a release height of 5 meters with no initial vertical dimension.

On-road DPM emissions were modeled as line sources near project features to account for the combined air pollutant concentrations from both of these sources. This modeling was achieved by individually modeling each of these on-road emissions in combination with the individual construction components. Haul routes within the vicinity of the proposed construction areas were included in the modeling as line sources. Exhaust emissions were modeled using a release height of 1.8 meters and no initial vertical dimension. Dust emissions were modeled using a ground level release height and an initial vertical dimension of 1 meter.

Meteorological Data

In order to run AERMOD, the following hourly surface meteorological data are required: wind speed, wind direction, ambient temperature, and opaque cloud cover. In addition, the daily upper air sounding data are required (EPA, 2004).

These meteorological variables are used to estimate air dispersion of pollutants in the atmosphere. Wind speed determines how rapidly pollutants are diluted and influences the rise of

the emission plume in the air, thus affecting downwind pollutant concentrations. Wind direction determines where pollutants will be transported. The difference in ambient temperature and the emission releasing temperature from sources determines the initial buoyancy of emissions. In general, the greater the temperature difference, the higher the plume rise. The opaque cloud cover and upper air sounding data are used in calculations to determine other important dispersion parameters. These include atmospheric stability (a measure of turbulence and the rate at which pollutants disperse laterally and vertically) and mixing height (the vertical depth of the atmosphere within which dispersion occurs). The greater the mixing height is, the larger the volume of atmosphere is available to dilute the pollutant concentration (CARB, 2008).

Three different sets of meteorological data were used for the AERMOD modeling. These included meteorological data for the Sacramento Executive Airport in Sacramento, California, the Stockton Metropolitan Airport in Stockton, California, and the Contra Costa Power Plant in Antioch, California. The Sacramento Executive Airport data set included hourly data from 2001 through 2005 and was supplied by SMAQMD. The Stockton Metropolitan Airport meteorological data was provided by SJVAPCD and included hourly data from 2005 through 2009. The Contra Costa Power Plant meteorological data was provided by BAAQMD and included hourly data from 2007 through 2012.

The Sacramento meteorological data were used for modeling of receptors located within the jurisdictions of the YSAMQD and SMAQMD. The Stockton meteorological data was used for modeling for receptors located within the jurisdiction of the SJVAPCD. The Contra Costa meteorological data was used for receptors located within the jurisdiction of the BAAQMD (see Table 4).

Table 4. Meteorological Data Summary

Meteorological Data (Years)	Meteorological Data Collection Location	Use for Modeling Areas Located:
Sacramento (2001 – 2005)	Sacramento Executive Airport, Sacramento, CA	YSAQMD and SMAQMD
Stockton (2005 – 2009)	Stockton Metropolitan Airport, Stockton, CA	SJVAPCD
Contra Costa (2007 – 2012)	Contra Costa Power Plant Antioch, CA	BAAQMD

CA = California

Figures 3, 4, and 5 show wind rose for the Sacramento Executive Airport, Stockton Metropolitan Airport, and Contra Costa Power Plant met data, respectively. The Sacramento wind rose shows predominant winds from the southwest and south. Wind roses for both Stockton and Contra Costa show that winds from the west and northwest predominate.

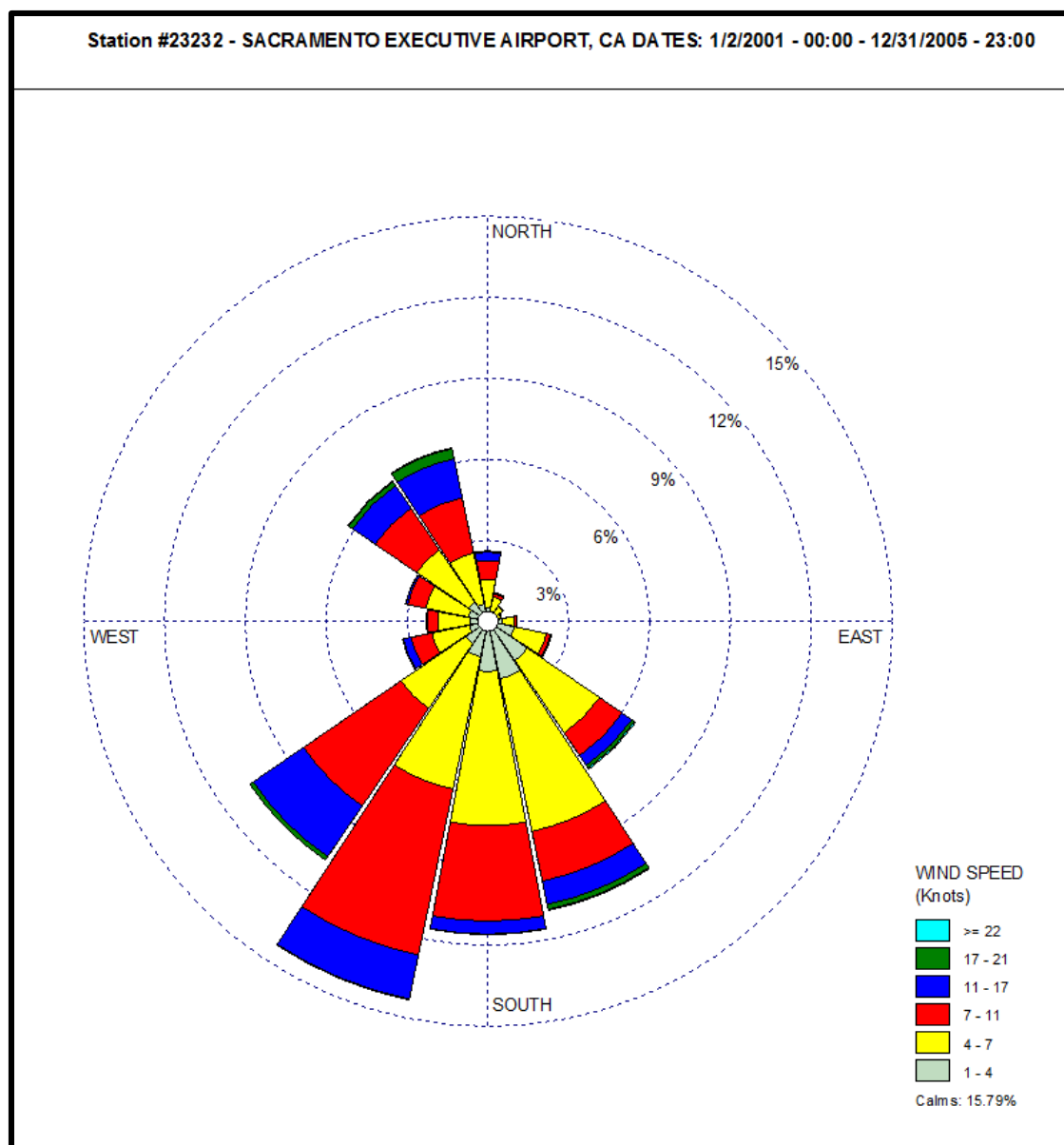


Figure 3. Wind Rose for Sacramento Executive Airport

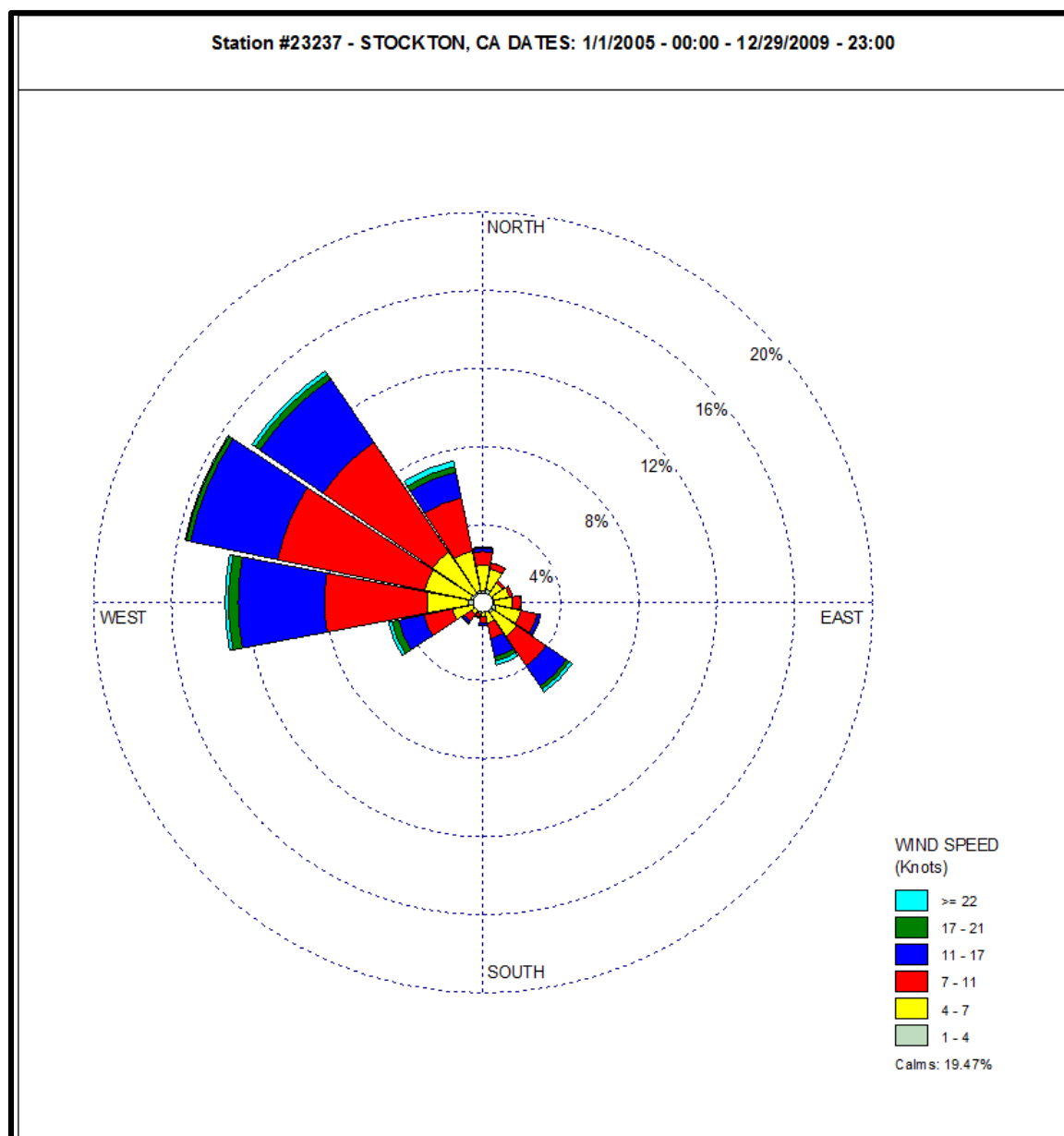


Figure 4. Wind Rose for Stockton Metropolitan Airport

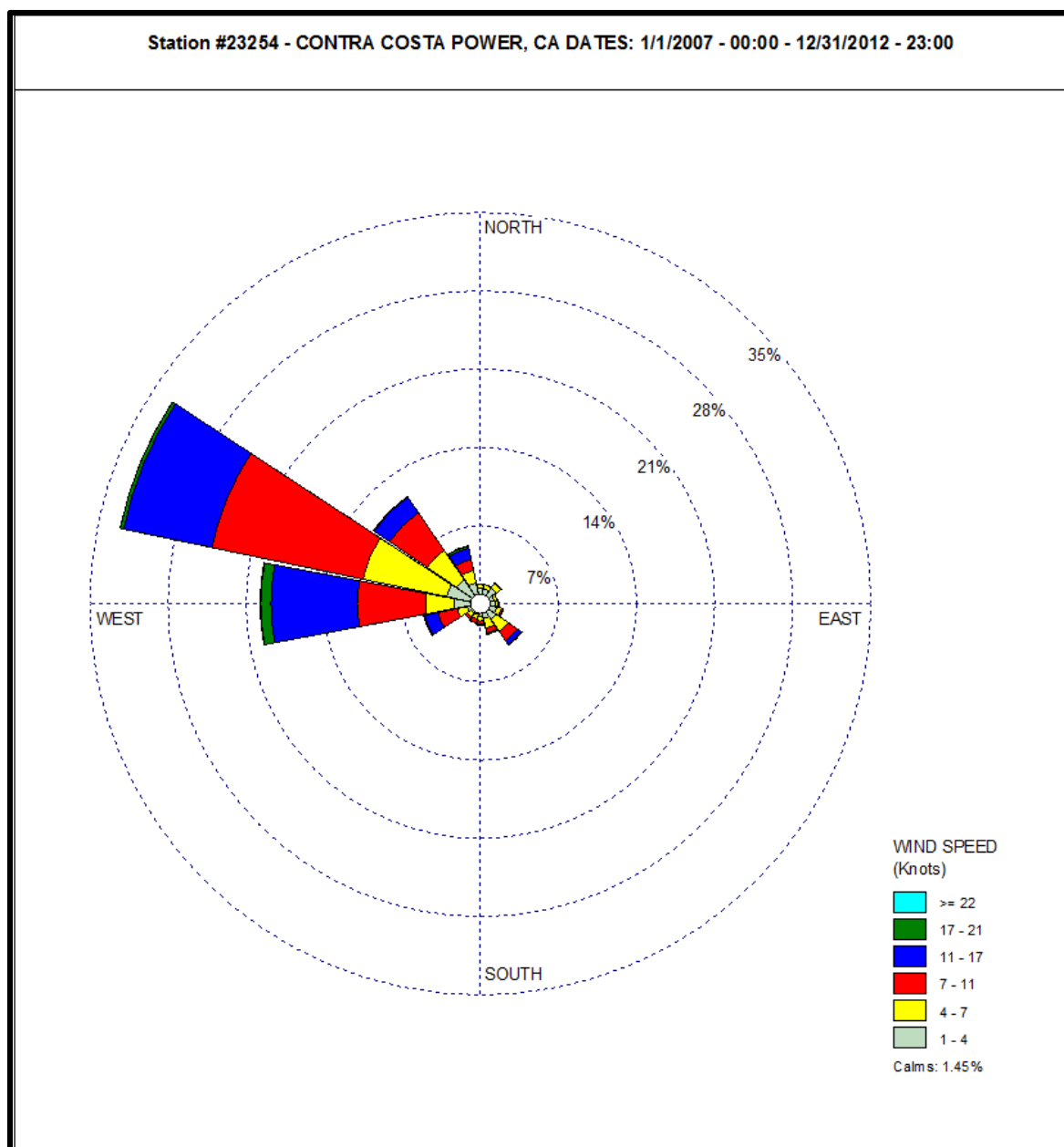


Figure 5. Wind Rose for Contra Costa Power Plant

Sensitive Receptors

AERMOD was used to estimate pollutant concentrations at sensitive receptors. Sensitive receptors include residences, schools, day care centers, parks, and medical facilities where the most susceptible individuals could be exposed to pollutant emissions generated by the construction of each BDCP alternative. The ultimate goal of the analysis was to find, for each alternative, the maximally exposed individual (MEI). The MEI refers to the sensitive receptor location that would be exposed to the highest pollutant concentrations and health risks from project construction.

For each alternative, the sensitive receptors evaluated using the AERMOD model was removed if located within an alternative's construction footprint. Modeled receptors were evaluated for

their potential to exceed air district significance thresholds with receptor locations analyzed at a minimum of 3,000 feet from a project feature. Pollutant concentrations and health risks were estimated for each of these receptors.

Terrain Data

The United States Geological Service's (USGS's) 7.5-minute digital elevation model (DEM) files were imported into AERMOD. These files consist of terrain elevations for ground positions at regularly spaced horizontal intervals.

The 7.5-minute DEMs produced by USGS correspond in coverage to standard 1:24,000-scale 7.5- x 7.5-minute quadrangles and are based on 30-meter by 30-meter data spacing with the Universal Transverse Mercator projection.

Terrain elevations allow AERMOD to estimate concentrations at sensitive receptors located at or above the height of the emission source. This type of modeling scenario is known as complex terrain. For this analysis, AERMOD was run using the complex terrain assumption.

Other Modeling Parameters

Urban/Rural

The AERMOD model requires that the user specify whether a site should be modeled as either urban or rural. The urban option allows the user to incorporate the effects of increased surface heating from an urban area on pollutant dispersion under stable atmospheric conditions. This surface heating typically causes better dispersion, which results in lower pollutant concentrations. The classification of a site as urban or rural, and thus the selection of either urban or rural dispersion coefficients, is based upon either the land use procedure or population density procedure. Of the two methods, the land use procedure is considered a more definitive criterion and was used in this analysis.

The land use procedure requires that the following procedure be used:

- Circumscribe a 3 kilometer radius circle, A., about the source using the meteorological land use typing scheme -
 - If land use types I1 (Heavy Industrial), I2 (Light-moderate Industrial), C1 (Commercial), R2 (Compact single, some multi-family residential), and R3 (Compact Multi-Family Residential) account for 50 percent or more of A., select the Urban option,
 - Otherwise, use the Rural option.

Based on an evaluation of each alternative, all AERMOD modeling runs were conducted using the rural modeling option because more than 50 percent of the land uses surrounding each of the proposed corridor alternatives are rural, as defined by the standard land use classification system (Auer, Jr., A. H., 1977) referenced in the revisions to the guidelines on air quality models (EPA, 2005). This rural definition holds for the entire length of each corridor, including the northern end of the corridors containing the water intakes located near the towns of Clarksburg, Hood, and Courtland.

Dose Response Evaluation

This HRA considers the following three types of health hazards:

- Acute non-carcinogenic hazard (one-hour or other short-term averaging periods)
- Chronic non-carcinogenic hazard (averaging period equivalent to the exposure duration)
- Carcinogenic risk (70-year [“lifetime”] averaging period)

Acute Non-cancer Hazard

Toxicity from acute exposure to DPM has not been adequately characterized to allow evaluation in an HRA (OEHHA and CARB, 2012). Consequently, acute health risks were not evaluated in this HRA.

Chronic Non-cancer Hazard

DPM poses a potential chronic health risk, but this risk is limited to inhalation exposures and resultant effects on the respiratory system (OEHHA and CARB, 2012).

The potential for chronic non-cancer hazards is evaluated by comparing the long-term exposure level calculated by the AERMOD air pollutant dispersion modeling to a chronic reference exposure level (REL). A chronic REL is a concentration at or below which no adverse health effects are anticipated to occur under continuous exposure for up to a lifetime. RELs are designed to protect sensitive individuals within the population. Unlike cancer health effects, non-cancer health effects are generally assumed to have thresholds for adverse effects. In other words, injury from a pollutant will not occur until exposure to that pollutant has reached or exceeded a certain concentration (i.e., threshold).

Chronic non-cancer hazard quotients are calculated by dividing the exposure period’s average concentration (as estimated using AERMOD) by the REL for that substance. The equation for estimating the dimensionless hazard quotient is:

$$\text{Chronic hazard quotient (HQ)} = \frac{C_i}{REL_i}$$

Where:

C_i = Concentration in the air of substance i (exposure period’s average concentration in micrograms per cubic meter [$\mu\text{g}/\text{m}^3$])

REL_i = Chronic noncancer Reference Exposure Level for substance i ($\mu\text{g}/\text{m}^3$)

The hazard index (HI) is the sum of the individual HQs for TACs identified as affecting the same target organ or organ systems. In accordance with OEHHA’s risk assessment guidelines, chronic non-cancer hazards should be assessed for inhalation and non-inhalation (e.g., ingestion and dermal contact) chronic exposures (OEHHA, 2003). However, for this HRA, DPM is the only substance of concern and DPM only affects the respiratory system.

Chronic hazard quotients exceeding 1 are considered significant. Exceeding either HQ or HI of 1 may indicate a potential for adverse chronic health impacts at this receptor location. Therefore, there is increased concern that exposed individuals may experience respiratory system irritation or injury, particularly among sensitive individuals.

For chronic health risks, the DPM chronic REL is $5 \mu\text{g}/\text{m}^3$ (OEHHA and CARB, 2012). Consequently, any modeled DPM concentration exceeding $5 \mu\text{g}/\text{m}^3$ would result in a chronic HQ exceeding 1, and would be considered a significant health hazard.

Cancer Risk

Cancer risk assessment involves estimating exposure to carcinogenic chemicals (for this HRA only DPM is evaluated), and multiplying the dose times the cancer potency factor. As agreed per agency consultation, a significant cancer risk is defined as a risk that exceeds 10 in one million.

DPM presents a cancer risk to the respiratory system (OEHHA and CARB, 2012). Consequently, the following procedure was used to assess inhalation cancer risk for BDCP construction activities.

- 1) DPM emissions were modeled using AERMOD to determine the average ground-level concentrations at each sensitive receptor location.
- 2) Ground level concentrations were converted to health risks using the following cancer risk equation (OEHHA, 2015):

RISK _{inh-res}	=	DOSE _{air} x CPF x ASF x ED/AT x FAH
RISK _{inh-res}	=	Residential inhalation cancer risk
DOSE _{air}	=	Daily inhalation dose
CPF	=	Inhalation cancer potency factor
ASF	=	Age sensitivity factor for a specified age group
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk
FAH	=	Fraction of time spent at home

For each receptor, the modeled concentration C_{air} was multiplied by the above inhalation factor and multiplied by one million to obtain the cancer risk in chances per million. The result was then adjusted by the number of years that construction would occur. For example, assuming that a construction project lasts 14 years, the ED factor would be reduced from 70 to 14 years, and the cancer risk would be reduced by a factor of 16/70.

However, for exposure periods that include pre-natal and young ages (up through age 15), an age sensitivity factor (ASF) is also used to adjust cancer risk. This ASF is based on OEHHA guidance (OEHHA, 2015). OEHHA recommends weighting cancer risk by a factor of 10 for exposures that occur from the third trimester of pregnancy through 2 years of age, and by a factor of 3 for exposures that occur from 2 years through 15 years of age. According to OEHHA, these weighting factors should be applied to all carcinogens to reflect increased susceptibility when exposure occurs at early stages of development.

In addition, a factor for the fraction of time at home (FAH) during the day was also used to adjust cancer risk. The FAH is based on OEHHA guidance (OEHHA 2012). OEHHA recommends using an FAH of 0.85 for exposures that occur from the third trimester of

pregnancy through 2 years of age, and an FAH of 0.72 for exposures that occur from 2 years through 15 years of age.

Construction of the proposed BDCP alternatives would take up to 14 years to complete. Table 5 shows the adjusted inhalation dose factors for each construction year.

Table 5. Adjusted Inhalation Dose Factor for Each Construction Year

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Adjusted Inhalation Dose Factor	1.16 E-04	1.40 E-04	5.59 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.80 E-05	2.52 E-05	2.42 E-05	2.42 E-05

This approach was used to calculate cancer risk for all sensitive receptor types included in the dispersion modeling analysis. The adjusted inhalation dose factors shown in Table 5 were used for all sensitive receptors because residences, schools, and health care facilities all have the potential to house pregnant females and young children who could be exposed to DPM emissions from construction.

Respirable Particulate Matter

Particulate matter is strongly associated with mortality, respiratory diseases, and impairment of lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease. Therefore, estimates of PM_{2.5} emissions from a new source can be used to approximate broader potential adverse health effects.

Significance Criteria

In summary, potential health risks and hazards from new sources on existing or proposed sensitive receptors are considered significant if they exceed either of the following MEI thresholds shown in Table 6.

Table 6. Air District Thresholds of Significance^a

Analysis	YSAQMD	SMAQMD ^a	BAAQMD ^b	SJVAPCD
Localized PM _{2.5}	Violation of NAAQS (24-hour: 35 µg/m ³) or CAAQS (annual: 12 µg/m ³), and failure to implement dust BMPs	Increase greater than 0.6 µg/m ³ annual for combined exhaust and dust concentration, or failure to implement dust emission control practices	Increase greater than annual 0.3 µg/m ³ for total concentration (combined exhaust and dust) and failure to implement fugitive dust	Increase greater than 2.08 µg/m ³ annual average or greater than 10.4 µg/m ³ 24-hour average for total concentration (combined exhaust and dust), and failure to implement BMPs
Localized PM ₁₀	Violation of CAAQS for total (exhaust and dust) emissions (24-hour: 50 µg/m ³ ; annual: 20 µg/m ³)	Increase greater than 1 µg/m ³ annual or greater than 2.5 µg/m ³ 24-hour average ^a for total (exhaust and dust), or failure to implement emissions control practices	BAAQMD has not established an incremental increase threshold for localized PM ₁₀ concentrations.	Increase greater than 2.08 µg/m ³ annual average or greater than 10.4 µg/m ³ 24-hour average for total concentration (combined exhaust and dust), and failure to implement BMPs
Localized DPM	Increased cancer risk of 10 in 1 million or increased non-cancer hazard of greater than 1.0 (HI)	Increased cancer risk of 10 in 1 million or increased non-cancer hazard of greater than 1.0 (HI)	Increased cancer risk of 10 in 1 million; increased non-cancer hazard of greater than 1.0 (HI)	Increased cancer risk of 10 in 1 million or increased non-cancer hazard of greater than 1.0 (HI)

Sources: Yolo-Solano Air Quality Management District 2015; Sacramento Metropolitan Air Quality Management District 2014; Bay Area Air Quality Management District 2015; San Joaquin Valley Air Pollution Control District 2015; Siong pers. comm. 2011; Villalvazo pers. comm.

^a Per the SMAQMD's CEQA guidelines (2014), a "project is considered significant if emissions exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS. A substantial contribution is considered an emission that is equal to or greater than 5% of a CAAQS." Since PM₁₀ background concentrations in the Plan Area currently exceed the CAAQS, it is necessary to evaluate if the project will contribute to existing violations of the CAAQS and result in an incremental increase of more than 5% of the PM₁₀ CAAQS. This equates to an increase greater than 2.5 µg/m³ for the 24-hour state PM₁₀ standard and 1 µg/m³ for the annual state PM₁₀ standard.

^b Note that a quantitative cumulative analysis was not conducted due to the rural nature of the project area (additional major sources are not anticipated in the vicinity of the project area). Consequently, the BAAQMD's quantitative cumulative thresholds of an increase greater than 0.8 µg/m³, increased cancer risk of 100 in 1 million, and increased non-cancer hazard of greater than 10 (HI) were not evaluated. However, cumulative health risks are considered in relation to ongoing and reasonably foreseeable future projects in the air basin. Please refer to Section 22.3.3.17.

Risk Characterization

The following sub-sections present the highest chronic and carcinogenic health risk results, by corridor and regulatory jurisdictional area.

Pipeline Tunnel Option (PTO) Corridor

The PTO corridor includes eight alternatives. From a construction standpoint, the primary difference among these alternatives is the number and location of the intakes, all of which are at the north end of the corridor (see Figure 2). The eight PTO alternatives include either one (Alternative 5), two (Alternative 3), three (Alternatives 4, 7, or 8), or five (1A, 2A, or 6A) intakes located at up to seven intake locations.

PTO - Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Results

Chronic and Carcinogenic Health Risk Results

Yolo-Solano Air Quality Management District

Table 7 shows the 10 receptors with the highest chronic health risks for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 within YSAQMD. As Table 7 shows, none of the sensitive receptors would have a chronic HQ exceeding 1 (annual concentration divided by 5). Consequently, Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 would not result in a chronic health risk to sensitive receptors.

Table 7. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in YSAQMD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
629514	4255184	0.002	5
629616	4255200	0.002	5
629419	4255213	0.001	4
629352	4255216	0.001	4
629281	4255212	0.001	4
629049	4255184	0.001	4
629569	4255241	0.001	4
629623	4255251	0.001	4
629886	4255284	0.001	4
629117	4255216	0.001	3

x, y = Universal Transverse Mercator coordinates

Table 7 also shows the carcinogenic health risk results for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. Of the 10 sensitive receptors with the highest cancer risk per million in YSAQMD, none show risks exceeding the 10 in one million threshold.

Sacramento Metropolitan Air Quality Management District

Table 8 shows the 10 receptors with the highest chronic health risks for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 within SMAQMD. As Table 8 shows, none of the sensitive receptors within SMAQMD would have a chronic non-cancer HQ exceeding 1. Consequently, Alternative 1A would not pose chronic non-cancer health hazards to sensitive receptors.

Table 8. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in SMAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
629863	4249763	0.003	9
629430	4247578	0.003	9
630027	4250894	0.003	8
629447	4247594	0.002	7
630081	4255051	0.002	7
629387	4247730	0.002	7
629759	4247636	0.002	7
629507	4247556	0.002	7
629362	4247761	0.002	6
629433	4247663	0.002	6

x, y = Universal Transverse Mercator coordinates

Table 8 also shows the carcinogenic risk results for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 sensitive receptors within SMAQMD. Of the 10 sensitive receptors with the highest cancer risk per million in SMAQMD, none show risks exceeding the 10 in one million threshold.

San Joaquin Valley Air Pollution Control District

Table 9 shows the 10 receptors with the highest chronic health risks for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 within SJVAPCD. As Table 9 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 would not pose chronic non-cancer health hazards to sensitive receptors within SJVAPCD.

Table 9. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in SJVAPCD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
627703	4219724	0.001	3
627714	4219684	0.001	3
627110	4186404	0.001	3
627603	4194572	0.001	2
627726	4219711	0.001	2
627233	4186358	0.001	2
627228	4186343	0.001	2
627175	4186316	0.001	2
627260	4186346	0.001	2
627206	4186307	0.001	2

x, y = universal transverse Mercator coordinates

Table 9 also shows the carcinogenic health risk results for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. Of the 10 sensitive receptors with the highest cancer risk in SJVAPCD, none show risks exceeding the 10 in one million threshold.

Bay Area Air Quality Management District

Table 10 shows the chronic health risk results for the 10 receptors with the highest cancer and chronic hazard exposures for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 within BAAQMD. As Table 10 shows, none of the six sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 would not pose chronic non-cancer health hazards to sensitive receptors within BAAQMD.

Table 10. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 Chronic and Carcinogenic Health Risk Results in BAAQMD

x	u	Chronic Hazard Quotient	Cancer Risk per Million
624924	4185992	0.004	13.16
624946	4186023	0.004	12.79
626972	4186446	0.004	11.11
626993	4186446	0.004	10.88
626961	4186410	0.003	10.47
627002	4186425	0.003	10.37
626819	4186350	0.003	10.04
626675	4186290	0.003	10.03
626937	4186383	0.003	9.98
627013	4186407	0.003	9.83

x, y = universal transverse Mercator coordinates

Table 10 also shows the carcinogenic health risk results for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. Of the 10 sensitive receptors with highest cancer health risk in BAAQMD, 8 receptors show risks exceeding the 10 in one million threshold.

Fine Particulate Matter Less than 2.5 Microns (PM2.5) Results

Yolo-Solano Air Quality Management District

Table 11 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than YSAQMD's threshold of 12 µg/m³ and all 24-hour concentrations are less than the 35 µg/m³ threshold.

Table 11. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in YSAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
629514	4255184	0.04	628884	4248408	1.1
629616	4255200	0.04	628921	4248314	1.1
629419	4255213	0.03	628823	4248400	1.0
629352	4255216	0.03	628859	4248313	1.0
629281	4255212	0.03	629514	4255184	1.0
629569	4255241	0.03	629616	4255200	0.9
629049	4255184	0.03	629038	4247879	0.9
629623	4255251	0.03	629419	4255213	0.9
629886	4255284	0.03	629352	4255216	0.9
629217	4255230	0.03	628829	4248927	0.9

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 12 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within SMAQMD for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than SMAQMD's threshold of 0.6 µg/m³. The SMAQMD has not established a 24-hour PM2.5 significance threshold.

Table 12. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM2.5 Concentration Results in SMAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
629863	4249763	0.09	629681	4251776	1.7
629430	4247578	0.08	629863	4249763	1.6
630027	4250894	0.07	629848	4251234	1.5
629387	4247730	0.06	629188	4248305	1.4
630081	4255051	0.06	629676	4240293	1.4
629447	4247594	0.06	629624	4240067	1.3
629759	4247636	0.06	629387	4247730	1.3
629362	4247761	0.06	629865	4241011	1.3
629507	4247556	0.05	629430	4247578	1.3
629433	4247663	0.05	629635	4242120	1.3

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 13 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within SJVAPCD for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than SJVAPCD's threshold of 2.08 µg/m³ and all 24-hour concentrations are less than SJVAPCD's threshold of 10.4 µg/m³.

Table 13. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM_{2.5} Concentration Results in SJVAPCD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
627703	4219724	0.02	628183	4205959	2.9
627714	4219684	0.02	628502	4203393	1.4
628183	4205959	0.02	627298	4208029	1.1
627726	4219711	0.02	627110	4186404	0.9
627603	4194572	0.01	627703	4219724	0.8
627110	4186404	0.01	628171	4207743	0.8
627233	4186358	0.01	627175	4186316	0.7
627228	4186343	0.01	627714	4219684	0.7
627175	4186316	0.01	627233	4186358	0.7
627260	4186346	0.01	627228	4186343	0.7

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 14 shows the highest 24-hour and annual concentrations of PM_{2.5} for the 10 receptors with the highest exposure to PM_{2.5} for Alternatives 1A, 2A, 3, 5, 6A, 7, within BAAQMD. All annual concentrations are less than BAAQMD's threshold of 0.3 µg/m³. The BAAQMD has not established a 24-hour PM_{2.5} significance threshold.

Table 14. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM_{2.5} Concentration Results in BAAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
624946	4186023	0.07	626972	4186446	6.1
624924	4185992	0.07	626993	4186446	6.1
626972	4186446	0.05	627002	4186425	5.9
626993	4186446	0.05	626961	4186410	5.7
626961	4186410	0.05	627013	4186407	5.5
627002	4186425	0.05	626937	4186383	5.3
626937	4186383	0.05	626986	4186384	5.2
626819	4186350	0.05	626970	4186376	5.2
627013	4186407	0.05	626675	4186290	5.2
626675	4186290	0.05	626925	4186370	5.1

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Respirable Particulate Matter Less than 10 Microns (PM10) Results

Yolo-Solano Air Quality Management District

Table 15 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than YSAQMD's threshold of 20 $\mu\text{g}/\text{m}^3$ and all 24-hour concentrations are less than the 50 $\mu\text{g}/\text{m}^3$ threshold.

Table 15. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in YSAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629514	4255184	0.3	628884	4248408	7
629616	4255200	0.2	628921	4248314	7
629419	4255213	0.2	628823	4248400	6
629352	4255216	0.2	628859	4248313	6
629281	4255212	0.2	629514	4255184	6
629569	4255241	0.2	629616	4255200	6
629049	4255184	0.2	629419	4255213	6
629623	4255251	0.2	629038	4247879	6
629886	4255284	0.2	629352	4255216	6
629217	4255230	0.2	629281	4255212	6

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 16 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SMAQMD for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than SMAQMD's threshold of 0.6 $\mu\text{g}/\text{m}^3$. The results show that there may be exceedances of SMAQMD's 24-hour threshold of 2.5 $\mu\text{g}/\text{m}^3$ at 225 receptor locations.

Table 16. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629863	4249763	0.5	629681	4251776	11
629430	4247578	0.5	629863	4249763	10
630027	4250894	0.4	629848	4251234	9
630081	4255051	0.4	629676	4240293	9
629447	4247594	0.4	629188	4248305	8
629387	4247730	0.4	629624	4240067	8
629759	4247636	0.4	629865	4241011	8
629507	4247556	0.3	629635	4242120	8
629362	4247761	0.3	629747	4239326	8
629433	4247663	0.3	629430	4247578	8

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 17 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SJVAPCD for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8. All annual concentrations are less than SJVAPCD's threshold of 2.08 $\mu\text{g}/\text{m}^3$, and 24-hour concentrations would exceed SJVAPCD's threshold of 10.4 $\mu\text{g}/\text{m}^3$ at four receptor locations.

Table 17. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in SJVAPCD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
627703	4219724	0.1	628183	4205959	37.1
627714	4219684	0.1	628502	4203393	17.9
628183	4205959	0.1	627298	4208029	14.3
627726	4219711	0.1	627703	4219724	10.4
627603	4194572	0.1	628171	4207743	10.2
627110	4186404	0.1	628514	4207688	9.1
627233	4186358	0.0	627714	4219684	8.8
627228	4186343	0.0	628676	4200962	8.8
627175	4186316	0.0	628689	4200931	8.6
627260	4186346	0.0	627110	4186404	8.6

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 18 shows the 10 highest 24-hour and annual concentrations of PM10 for the six receptors for Alternatives 1A, 2A, 3, 5, 6A, 7, and 8 within BAAQMD. BAAQMD has not developed thresholds for annual or 24-hour PM10 concentrations.

Table 18. Alternative 1A, 2A, 3, 5, 6A, 7, and 8 PM10 Concentration Results in BAAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
624946	4186023	0.3	626972	4186446	31
624924	4185992	0.3	626993	4186446	30
626972	4186446	0.3	627002	4186425	29
626993	4186446	0.3	626961	4186410	28
626961	4186410	0.2	627013	4186407	27
627002	4186425	0.2	626937	4186383	25
626937	4186383	0.2	626986	4186384	25
627013	4186407	0.2	626675	4186290	25
626819	4186350	0.2	626970	4186376	25
626675	4186290	0.2	624924	4185992	25

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

PTO - Alternative 4 Results

Chronic and Carcinogenic Health Risk Results

Yolo-Solano Air Quality Management District

Table 19 shows the 10 receptors with the highest chronic health risks for Alternative 4 within YSAQMD. As Table 19 shows, none of the sensitive receptors would have a chronic HQ exceeding 1. Consequently, Alternative 4 would not result in a chronic health risk to sensitive receptors.

Table 19. Alternative 4 Chronic and Carcinogenic Health Risk Results in YSAQMD

x	Y	Chronic Hazard Quotient	Cancer Risks per Million
629061	4249357	0.0004	1
629071	4249386	0.0003	1
629031	4249336	0.0003	1
628150	4246056	0.0003	1
629001	4249318	0.0003	1
628862	4249014	0.0003	1
628568	4246553	0.0002	1
628829	4248927	0.0002	1
627888	4245752	0.0002	1
628816	4248877	0.0002	1

x, y = universal transverse Mercator coordinates

Table 19 also shows the carcinogenic health risk results for Alternatives 4. Of the 10 sensitive receptors with the highest cancer risk per million in YSAQMD, none show risks exceeding the 10 in one million threshold.

Sacramento Metropolitan Air Quality Management District

Table 20 shows the 10 receptors with the highest chronic health risks for Alternative 4 within SMAQMD. As Table 20 shows, none of the sensitive receptors within SMAQMD would have a chronic HQ exceeding 1. Consequently, Alternative 4 would not result in a chronic health risk to sensitive receptors.

Table 20. Alternative 4 Chronic and Carcinogenic Health Risk Results in SMAQMD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
628739	4246274	0.0016	5
629575	4247537	0.0012	4
629788	4249623	0.0011	3
630475	4242655	0.0011	3
630076	4252566	0.0010	3
629559	4247789	0.0010	3
630027	4250894	0.0010	3
629598	4247531	0.0010	3
629994	4247594	0.0010	3
629354	4247779	0.0009	3

x, y = universal transverse Mercator coordinates

Table 20 also shows the carcinogenic health risk results for Alternative 4 sensitive receptors within SMAQMD. Of the 10 sensitive receptors with the highest cancer risk per million in SMAQMD, none show risks exceeding the 10 in one million threshold.

San Joaquin Valley Air Pollution Control District

Table 21 shows the 10 receptors with the highest chronic health risks for Alternative 4 within SJVAPCD. As Table 21 shows, none of the sensitive receptors would have a chronic HQ exceeding 1. Consequently, Alternative 4 would not result in a chronic health risk to sensitive receptors within SJVAPCD.

Table 21. Alternative 4 Chronic and Carcinogenic Health Risk Results in SJVAPCD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
628411	4219855	0.0008	2
628396	4219891	0.0006	2
627980	4216034	0.0006	2
631537	4216916	0.0004	1
627603	4194572	0.0004	1
632090	4232214	0.0004	1
632081	4232147	0.0004	1
628935	4220140	0.0004	1
632067	4232056	0.0004	1
628183	4205959	0.0004	1

x, y = universal transverse Mercator coordinates

Table 21 also shows the carcinogenic health risk results for Alternative 4. Of the 10 sensitive receptors with the highest cancer risk per million in SJVAPCD, none show risks exceeding the 10 in one million threshold.

Bay Area Air Quality Management District

Table 22 shows the 10 receptors with the highest chronic health risks for Alternative 4 within BAAQMD. As Table 22 shows, none of the sensitive receptors would have a chronic HQ exceeding 1. Consequently, Alternatives 4 would not result in a chronic health risk to sensitive receptors within BAAQMD.

Table 22. Alternative 4 Chronic and Carcinogenic Health Risk Results in BAAQMD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
623495	4187453	0.0017	5
624946	4186023	0.0013	4
626972	4186446	0.0013	4
626993	4186446	0.0013	4
626961	4186410	0.0012	4
627002	4186425	0.0012	4
623149	4188720	0.0012	4
626819	4186350	0.0012	4
626937	4186383	0.0012	4
627013	4186407	0.0012	4

x, y = universal transverse Mercator coordinates

Table 22 also shows the carcinogenic health risk results for Alternative 4. Of the 10 sensitive receptors with the highest cancer risk per million in BAAQMD, none show risks exceeding the 10 in one million threshold.

Fine Particulate Matter Less than 2.5 Microns (PM2.5) Results

Yolo-Solano Air Quality Management District

Table 23 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within YSAQMD's jurisdiction for Alternative 4. All annual concentrations are less than YSAQMD's threshold of 12 µg/m³ and all 24-hour concentrations are less than the 35 µg/m³ threshold.

Table 23. Alternative 4 PM2.5 Concentration Results in YSAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
629061	4249357	0.010	628884	4248408	0.4
629071	4249386	0.009	628859	4248313	0.4
629031	4249336	0.009	628823	4248400	0.4
628150	4246056	0.009	628808	4248836	0.3
629001	4249318	0.008	628816	4248877	0.3
628862	4249014	0.007	628829	4248927	0.3
628568	4246553	0.007	628765	4248838	0.3
628829	4248927	0.006	628862	4249014	0.3
627888	4245752	0.006	629654	4251428	0.3
628816	4248877	0.006	629665	4251386	0.3

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 24 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within SMAQMD for Alternative 4. All annual concentrations are less than SMAQMD's threshold of 0.6 µg/m³. The SMAQMD has not developed significance thresholds for 24-hour PM2.5.

Table 24. Alternative 4 PM2.5 Concentration Results in SMAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
628739	4246274	0.055	629788	4249623	0.5
629788	4249623	0.038	628739	4246274	0.5
629575	4247537	0.031	629526	4247760	0.5
630027	4250894	0.029	629304	4246850	0.4
630076	4252566	0.028	629526	4247649	0.4
629863	4249763	0.025	629510	4247797	0.4
629559	4247789	0.024	629242	4247944	0.4
629598	4247531	0.023	629532	4247586	0.4
629532	4247586	0.023	629559	4247789	0.4
629574	4247689	0.023	629374	4247689	0.4

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 25 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within SJVAPCD for Alternative 4. All annual concentrations are less than SJVAPCD's threshold of 2.08 µg/m³ and all 24-hour concentrations are less than SJVAPCD's threshold of 10.4 µg/m³.

Table 25. Alternative 4 PM_{2.5} Concentration Results in SJVAPCD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
628411	4219855	0.016	625829	4190985	1.1
628396	4219891	0.012	625845	4190980	1.1
627980	4216034	0.012	625859	4190975	1.1
631537	4216916	0.011	628411	4219855	1.1
632090	4232214	0.010	625890	4191102	1.1
632081	4232147	0.010	625883	4190968	1.1
628935	4220140	0.010	625881	4191090	1.1
632067	4232056	0.010	625921	4191108	1.0
626050	4191029	0.010	625817	4191006	1.0
626036	4191012	0.010	625878	4190987	1.0

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 26 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within BAAQMD for Alternative 4. All annual concentrations are less than BAAQMD's threshold of 0.3 µg/m³. The BAAQMD has not developed significance thresholds for 24-hour PM_{2.5}.

Table 26. Alternative 4 PM_{2.5} Concentration Results in BAAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
623149	4188720	0.036	625797	4191023	5.9
624946	4186023	0.030	622773	4188736	5.4
622773	4188736	0.028	622770	4188667	4.9
625797	4191023	0.028	622693	4188552	4.8
623495	4187453	0.028	621353	4189620	4.7
626972	4186446	0.026	626972	4186446	4.2
624924	4185992	0.026	626993	4186446	4.2
626993	4186446	0.026	627002	4186425	4.2
626961	4186410	0.025	627013	4186407	4.2
627002	4186425	0.025	626961	4186410	4.2

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Respirable Particulate Matter Less than 10 Microns (PM10) Results

Yolo-Solano Air Quality Management District

Table 27 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within YSAQMD's jurisdiction for Alternative 4. All annual concentrations are less than YSAQMD's threshold of 20 $\mu\text{g}/\text{m}^3$ and all 24-hour concentrations are less than the 50 $\mu\text{g}/\text{m}^3$ threshold.

Table 27. Alternative 4 PM10 Concentration Results in YSAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629061	4249357	0.059	628884	4248408	2.5
629071	4249386	0.057	628859	4248313	2.2
629031	4249336	0.056	628823	4248400	2.2
628150	4246056	0.054	628808	4248836	2.1
629001	4249318	0.052	628816	4248877	2.0
628862	4249014	0.045	628829	4248927	1.9
628568	4246553	0.041	628765	4248838	1.9
628829	4248927	0.040	628862	4249014	1.8
627888	4245752	0.038	629487	4251687	1.8
628816	4248877	0.037	629665	4251386	1.8

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 28 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SMAQMD for Alternative 4. All annual concentrations are less than SMAQMD's threshold of 1.0 $\mu\text{g}/\text{m}^3$. The results show that there may be exceedances of SMAQMD's 24-hour threshold of 2.5 $\mu\text{g}/\text{m}^3$ at 10 receptor locations.

Table 28. Alternative 4 PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
628739	4246274	0.402	629788	4249623	3.1
629788	4249623	0.269	628739	4246274	3.0
629575	4247537	0.212	629526	4247760	2.7
630076	4252566	0.199	629532	4247586	2.6
630027	4250894	0.199	629575	4247537	2.6
630076	4252566	0.171	629524	4247743	2.5
629863	4249763	0.158	629304	4246850	2.5
629532	4247586	0.157	629242	4247944	2.5
629559	4247789	0.155	629526	4247649	2.5
629598	4247531	0.146	629290	4247958	2.4

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Additional quantification was conducted to incorporate Mitigation Measure AQ-9 to reduce fugitive dust from roadways through the application of chemical suppressants and pave portions of work sites. The reductions in PM10 emissions associated with Mitigation Measure AQ-9 were not quantified for the other alignments due to the improbability of this measure reducing the impacts of the other alignments to below the respective significance thresholds.

Table 29 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SMAQMD for Alternative 4 with the implementation of Mitigation Measure AQ-9. All annual concentrations are less than SMAQMD's threshold of 1.0 $\mu\text{g}/\text{m}^3$ and 24-hour threshold of 2.5 $\mu\text{g}/\text{m}^3$.

Table 29. Alternative 4 Mitigated PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629575	4247537	0.138	630393	4252680	2.06
629559	4247789	0.122	629532	4247586	1.96
628739	4246274	0.118	629526	4247760	1.86
630393	4252680	0.112	630550	4252689	1.81
629574	4247689	0.104	632084	4236261	1.81
629532	4247586	0.099	629526	4247649	1.75
629568	4247751	0.096	629575	4247537	1.73
629526	4247760	0.093	629524	4247743	1.72
629570	4247738	0.093	630076	4252566	1.72
630076	4252566	0.092	629522	4247700	1.63

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 30 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SJVAPCD for Alternative 4. All annual concentrations are less than SJVAPCD's threshold of 2.08 $\mu\text{g}/\text{m}^3$, and all 24-hour concentrations are less than SJVAPCD's threshold of 10.4 $\mu\text{g}/\text{m}^3$.

Table 30. Alternative 4 PM10 Concentration Results in SJVAPCD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
628411	4219855	0.093	628411	4219855	6.9
628396	4219891	0.074	625829	4190985	6.6
631537	4216916	0.074	625845	4190980	6.6
627980	4216034	0.073	625859	4190975	6.5
632090	4232214	0.071	625890	4191102	6.5
632081	4232147	0.068	625883	4190968	6.5
632067	4232056	0.066	625881	4191090	6.5
628935	4220140	0.066	625921	4191108	6.4
626050	4191029	0.060	625902	4191122	6.4
626036	4191012	0.059	625910	4191094	6.4

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 31 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within BAAQMD for Alternative 4. BAAQMD has not developed thresholds for annual or 24-hour PM10 concentrations.

Table 31. Alternative 4 PM10 Concentration Results in BAAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
623149	4188720	0.158	625797	4191023	36.5
625797	4191023	0.157	622773	4188736	34.7
626972	4186446	0.157	622770	4188667	31.3
622773	4188736	0.155	622693	4188552	30.2
626993	4186446	0.149	621353	4189620	29.4
626961	4186410	0.148	623149	4188720	23.8
627002	4186425	0.144	621220	4189634	22.7
626937	4186383	0.143	626972	4186446	22.6
626819	4186350	0.143	626993	4186446	22.5
627013	4186407	0.141	627002	4186425	22.4

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

East Corridor

East Corridor - Alternative 1B and 6B Results

Chronic and Carcinogenic Health Risk Results

Yolo-Solano Air Quality Management District

Table 32 shows the 10 receptors with the highest chronic health risks for Alternatives 1B and 6B within YSAQMD. As Table 32 shows, none of the sensitive receptors would have a chronic HQ exceeding 1. Consequently, Alternatives 1B and 6B would not result in a chronic health risk to sensitive receptors.

Table 32. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in YSAQMD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
629616	4255200	0.001	4
629419	4255213	0.001	4
629352	4255216	0.001	4
629281	4255212	0.001	4
629569	4255241	0.001	4
629623	4255251	0.001	3
629886	4255284	0.001	3
629117	4255216	0.001	3
629217	4255230	0.001	3
629292	4255244	0.001	3

x, y = Universal Transverse Mercator coordinates

Table 32 also shows the carcinogenic health risk results for Alternatives 1B and 6B. Of the 10 sensitive receptors with the highest cancer risk per million in YSAQMD, none show risks exceeding the 10 in one million threshold.

Sacramento Metropolitan Air Quality Management District

Table 33 shows the 10 receptors with the highest chronic health risks for Alternatives 1B and 6B within SMAQMD. As Table 33 shows, none of the sensitive receptors within SMAQMD would have a chronic non-cancer HQ exceeding 1. Consequently, Alternative 1B and 6B would not pose a chronic non-cancer health hazard to sensitive receptors.

Table 33. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in SMAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
629808	4247639	0.003	9
629863	4249763	0.003	9
629751	4247660	0.003	8
630550	4252689	0.003	8
629430	4247578	0.003	8
629363	4247745	0.002	7
629387	4247730	0.002	6
629447	4247594	0.002	6
629749	4247680	0.002	6
629188	4248305	0.002	6

x, y = universal transverse Mercator coordinates

Table 33 also shows the carcinogenic health risk results for Alternatives 1B and 6B sensitive receptors within SMAQMD. Of the 10 sensitive receptors with the highest cancer risk per million in SMAQMD, none show risks exceeding the 10 in one million threshold.

San Joaquin Valley Air Pollution Control District

Table 34 shows the 10 receptors with the highest chronic health risks for Alternatives 1B and 6B within SJVAPCD. As Table 34 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1B and 6B would not result in a chronic non-cancer health risk to sensitive receptors within SJVAPCD.

Table 34. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in SJVAPCD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
639240	4200920	0.005	15
639365	4200938	0.004	13
630792	4189393	0.003	8
630847	4189469	0.002	8
636070	4231917	0.002	7
636543	4232128	0.002	6
638564	4202004	0.002	6
636627	4232113	0.002	6
636013	4231912	0.002	5
636719	4232102	0.002	5

x, y = universal transverse Mercator coordinates

Table 34 also shows the carcinogenic health risk results for Alternative 1B and 6B. Of the 10 sensitive receptors with the highest cancer risk per million in SJVAPCD, two exceed the 10 in one million risk threshold.

Bay Area Air Quality Management District

Table 35 shows the 10 receptors with the highest chronic health risk results for Alternatives 1B and 6B within BAAQMD. As Table 35 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1B and 6B would not pose chronic non-cancer health hazards to sensitive receptors within BAAQMD.

Table 35. Alternatives 1B and 6B Chronic and Carcinogenic Health Risk Results in BAAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
626675	4186290	0.002	5
626784	4186218	0.002	5
626972	4186446	0.002	5
626993	4186446	0.001	5
627002	4186425	0.001	4
627013	4186407	0.001	4
626986	4186384	0.001	4
626937	4186383	0.001	4
626957	4186355	0.001	4
626925	4186370	0.001	4

x, y = universal transverse Mercator coordinates

Table 35 also shows the carcinogenic health risk results for Alternatives 1B and 6B. Of the 10 sensitive receptors with the highest cancer risk per million in BAAQMD, none show risks exceeding the 10 in one million threshold.

Fine Particulate Matter Less than 2.5 Microns (PM_{2.5}) Results

Yolo-Solano Air Quality Management District

Table 36 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1B and 6B. All annual concentrations are less than YSAQMD's threshold of 12 µg/m³ and all 24-hour concentrations are less than the 35 µg/m³ threshold.

Table 36. Alternative 1B and 6B PM2.5 Concentration Results in YSAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629616	4255200	0.03	628884	4248408	1.1
629419	4255213	0.03	628150	4246056	1.0
629352	4255216	0.03	627888	4245752	1.0
629281	4255212	0.03	628859	4248313	1.0
629569	4255241	0.03	628823	4248400	1.0
629623	4255251	0.03	629665	4251386	0.9
629886	4255284	0.03	629654	4251428	0.9
629117	4255216	0.03	629616	4255200	0.8
629217	4255230	0.03	629419	4255213	0.8
629292	4255244	0.03	629352	4255216	0.8

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 37 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within SMAQMD for Alternatives 1B and 6B. All annual concentrations are less than SMAQMD's threshold of $0.6 \mu\text{g}/\text{m}^3$. The SMAQMD has not developed significance thresholds for 24-hour PM2.5.

Table 37. Alternative 1B and 6B PM2.5 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
630550	4252689	0.09	630550	4252689	3.5
629808	4247639	0.08	629808	4247639	3.3
629863	4249763	0.08	629751	4247660	2.8
629751	4247660	0.07	629685	4247675	2.5
629430	4247578	0.06	629176	4253098	2.4
629363	4247745	0.06	633233	4234637	2.1
629685	4247675	0.05	629749	4247680	2.0
629387	4247730	0.05	629664	4247572	1.7
629188	4248305	0.05	629683	4247693	1.7
629749	4247680	0.05	629807	4247682	1.7

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 38 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within SJVAPCD for Alternatives 1B and 6B. All annual concentrations are less than SJVAPCD's threshold of 2.08 µg/m³, and 24-hour concentrations at two receptor locations would exceed SJVAPCD's threshold of 10.4 µg/m³.

Table 38. Alternative 1B and 6B PM_{2.5} Concentration Results in SJVAPCD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
639240	4200920	0.12	633277	4234487	13.4
639365	4200938	0.11	633499	4235497	12.7
636070	4231917	0.06	633615	4235546	7.2
630792	4189393	0.06	638346	4198894	7.0
630847	4189469	0.06	639240	4200920	6.7
636627	4232113	0.05	630792	4189393	6.5
638564	4202004	0.05	630847	4189469	6.5
636543	4232128	0.05	636543	4232128	6.4
635948	4232022	0.05	636070	4231917	6.3
636013	4231912	0.05	635891	4231934	6.2

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 39 shows the highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within BAAQMD for Alternatives 1B and 6B. All annual concentrations are less than the BAAQMD's threshold of 0.3 µg/m³. The BAAQMD has not developed significance thresholds for 24-hour PM_{2.5}.

Table 39. Alternative 1B and 6B PM_{2.5} Concentration Results in BAAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
624946	4186023	0.04	624946	4186023	9.1
624924	4185992	0.03	624924	4185992	7.1
626675	4186290	0.03	628549	4189426	5.5
626972	4186446	0.03	626972	4186446	4.8
626993	4186446	0.03	626993	4186446	4.8
626784	4186218	0.03	623537	4185713	4.8
627002	4186425	0.03	627013	4186407	4.8
627013	4186407	0.03	627002	4186425	4.8
626961	4186410	0.03	626957	4186355	4.7
626937	4186383	0.03	626986	4186384	4.7

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Respirable Particulate Matter Less than 10 Microns (PM10) Results

Yolo-Solano Air Quality Management District

Table 40 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1B and 6B. All annual concentrations are less than YSAQMD's threshold of 20 $\mu\text{g}/\text{m}^3$ and all 24-hour concentrations are less than the 50 $\mu\text{g}/\text{m}^3$ threshold.

Table 40. Alternative 1B and 6B PM10 Concentration Results in YSAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629616	4255200	0.21	628884	4248408	6.6
629419	4255213	0.19	628150	4246056	6.5
629352	4255216	0.19	627888	4245752	6.2
629281	4255212	0.18	628823	4248400	6.0
629569	4255241	0.18	628859	4248313	5.9
629623	4255251	0.17	629665	4251386	5.4
629886	4255284	0.17	629654	4251428	5.3
629117	4255216	0.16	629616	4255200	5.2
629217	4255230	0.16	629419	4255213	5.2
629292	4255244	0.16	629352	4255216	5.1

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 41 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SMAQMD for Alternatives 1B and 6B. All annual concentrations are less than SMAQMD's threshold of 1.0 $\mu\text{g}/\text{m}^3$. The results show that there may be exceedances of SMAQMD's 24-hour threshold of 2.5 $\mu\text{g}/\text{m}^3$ at 186 receptor locations.

Table 41. Alternative 1B and 6B PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
630550	4252689	0.53	630550	4252689	21.1
629808	4247639	0.50	629808	4247639	20.1
629863	4249763	0.50	629751	4247660	16.4
629751	4247660	0.41	629176	4253098	15.5
629363	4247745	0.39	629685	4247675	14.7
629430	4247578	0.39	633233	4234637	13.8
629387	4247730	0.32	629749	4247680	11.8
629188	4248305	0.32	629807	4247682	10.3
629685	4247675	0.32	629683	4247693	10.3
629447	4247594	0.31	629664	4247572	10.2

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 42 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SJVAPCD for Alternatives 1B and 6B. All annual concentrations are less than SJVAPCD's threshold of $2.08 \mu\text{g}/\text{m}^3$, and there may be exceedances of SJVAPCD's 24-hour concentration threshold of $10.4 \mu\text{g}/\text{m}^3$ at 108 receptor locations

Table 42. Alternative 1B and 6B PM10 Concentration Results in SJVAPCD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
639240	4200920	0.70	633277	4234487	88.4
639365	4200938	0.68	633499	4235497	83.7
636070	4231917	0.38	633615	4235546	46.2
630792	4189393	0.36	638346	4198894	43.2
630847	4189469	0.35	636543	4232128	40.0
638564	4202004	0.31	630792	4189393	39.1
636627	4232113	0.31	635891	4231934	38.8
635948	4232022	0.29	630847	4189469	38.1
636013	4231912	0.28	636070	4231917	37.8
636719	4232102	0.28	639240	4200920	36.9

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 43 shows the 10 highest 24-hour and annual concentrations of PM10 at the six sensitive receptors within BAAQMD for Alternatives 1B and 6B. BAAQMD has not developed thresholds for annual or 24-hour PM10 concentrations.

Table 43. Alternative 1B and 6B PM10 Concentration Results in BAAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
624946	4186023	0.21	624946	4186023	52.5
624924	4185992	0.21	624924	4185992	39.5
626675	4186290	0.19	628549	4189426	29.7
626972	4186446	0.17	623537	4185713	27.9
626993	4186446	0.17	626805	4185794	24.2
626784	4186218	0.16	626801	4185775	24.1
627002	4186425	0.16	626972	4186446	23.6
627013	4186407	0.16	626993	4186446	23.5
626961	4186410	0.16	626848	4185775	23.4
626937	4186383	0.16	627002	4186425	23.1

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

West Corridor

West Corridor - Alternative 1C, 2C, and 6C Results

Chronic and Carcinogenic Health Risk Results

Yolo-Solano Air Quality Management District

Table 44 shows the 10 receptors with the highest chronic health risks for Alternatives 1C, 2C, and 6C within YSAQMD. These receptors are all located in Yolo County near the intakes in areas near the towns of Clarksburg and Hood. As Table 44 shows, none of the sensitive receptors would have a chronic HQ exceeding 1. Consequently, Alternatives 1C, 2C, and 6B would not result in a chronic health risk to sensitive receptors.

Table 44. Alternatives 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in YSAQMD

x	y	Chronic Hazard Quotient	Cancer Risks per Million
629840	4255395	0.003	9
628700	4246675	0.003	9
628765	4248838	0.003	8
628808	4248836	0.002	7
628754	4248892	0.002	5
628816	4248877	0.002	5
629951	4255379	0.002	5
629006	4252595	0.002	5
619071	4244365	0.002	5
628784	4248943	0.001	4

x, y = Universal Transverse Mercator coordinates

Table 44 also shows the carcinogenic health risk results for Alternatives 1C, 2C, and 6C. Of the 10 sensitive receptors with the highest cancer risk per million in YSAQMD, none of the receptor locations show risks exceeding the 10 in one million threshold.

Sacramento Metropolitan Air Quality Management District

Table 45 shows the 10 receptors with the highest chronic health risks for Alternatives 1C, 2C, and 6C within SMAQMD. As Table 45 shows, none of the sensitive receptors within SMAQMD would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1C, 2C, and 6C would not pose chronic non-cancer health hazards to sensitive receptors.

Table 45. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in SMAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
629188	4248305	0.001	3
629476	4252488	0.001	3
629242	4247944	0.001	3
629239	4247763	0.001	2
629807	4251753	0.001	2
628503	4245954	0.001	2
629271	4254969	0.001	2
626518	4244939	0.001	2
626345	4244891	0.001	2
629580	4254965	0.001	2

x, y = universal transverse Mercator coordinates

Table 45 also shows the carcinogenic risk results for Alternatives 1C, 2C, and 6C sensitive receptors within SMAQMD. Of the 10 sensitive receptors with the highest cancer risk per million in SMAQMD, none show risks exceeding the 10 in one million risk threshold.

San Joaquin Valley Air Pollution Control District

Table 46 shows the 10 receptors with the highest chronic health risks for Alternatives 1C, 2C, and 6C within SJVAPCD. As Table 46 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1C, 2C, and 6C would not pose chronic non-cancer health hazards to sensitive receptors within SJVAPCD.

Table 46. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in SJVAPCD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
625817	4191006	0.000	1
625853	4191056	0.000	1
625839	4191047	0.000	1
625834	4191033	0.000	1
625829	4190985	0.000	1
625845	4190980	0.000	1
625881	4191090	0.000	1
625873	4191079	0.000	1
625880	4191057	0.000	1
625864	4191035	0.000	1

x, y = universal transverse Mercator coordinates

Table 46 also shows the carcinogenic risk results for Alternatives 1C, 2C, and 6C sensitive receptors within SJVAPCD. Of the 10 sensitive receptors with the highest cancer risk per million in SJVAPCD, none show risks exceeding the 10 in one million risk threshold.

Bay Area Air Quality Management District

Table 47 shows the 10 receptors with the highest chronic health risks for Alternatives 1C, 2C, and 6C within BAAQMD. As Table 47 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternatives 1C, 2C, and 6C would not pose chronic non-cancer health hazards to sensitive receptors within BAAQMD.

Table 47. Alternative 1C, 2C, and 6C Chronic and Carcinogenic Health Risk Results in BAAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
619931	4201595	0.006	18
620287	4194440	0.006	18
620354	4195129	0.006	17
620286	4194466	0.005	16
620281	4194867	0.005	16
620743	4198374	0.005	16
620329	4194438	0.005	16
620284	4194843	0.005	16
620323	4195661	0.005	16
620605	4196781	0.005	16

x, y = universal transverse Mercator coordinates

Table 47 also shows the highest carcinogenic health risk results for Alternatives 1C, 2C, and 6C. All 10 sensitive receptors provided in the table and a total of 186 modeled sensitive receptors along the pipeline corridor and within the jurisdiction of BAAQMD show results greater than the 10 in one million threshold.

Fine Particulate Matter Less than 2.5 Microns (PM_{2.5}) Results

Yolo-Solano Air Quality Management District

Table 48 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1C, 2C, and 6C. All annual concentrations are less than YSAQMD's threshold of 12 µg/m³ and all 24-hour concentrations are less than the 35 µg/m³ threshold.

Table 48. Alternatives 1C, 2C, and 6C PM_{2.5} Concentration Results in YSAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
628700	4246675	0.084	628765	4248838	1.4
629840	4255395	0.079	618973	4236541	1.4
628765	4248838	0.062	628700	4246675	1.3
628808	4248836	0.054	629840	4255395	1.3
629006	4252595	0.040	628808	4248836	1.3
628754	4248892	0.040	629006	4252595	1.2
629951	4255379	0.040	618991	4236436	1.2
628816	4248877	0.037	628754	4248892	1.0
627501	4254071	0.035	625403	4244478	1.0
628784	4248943	0.029	627474	4248741	1.0

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 49 shows the 10 highest 24-hour and annual concentrations of PM_{2.5} at sensitive receptors within SMAQMD for Alternatives 1C, 2C, and 6C. All annual concentrations are less than SMAQMD's threshold of 0.6 µg/m³. The results show that there will not be exceedances of SMAQMD's 24-hour threshold of 2.5 µg/m³.

Table 49. Alternatives 1C, 2C, and 6C PM_{2.5} Concentration Results in SMAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
629188	4248305	0.021	627684	4245223	1.1
629476	4252488	0.019	628189	4245468	1.0
629242	4247944	0.019	628380	4245780	0.9
629239	4247763	0.019	626345	4244891	0.9
629271	4254969	0.017	628023	4245146	0.9
629580	4254965	0.017	626518	4244939	0.9
626518	4244939	0.016	629271	4254969	0.8
629807	4251753	0.016	628739	4246274	0.8
628503	4245954	0.016	628503	4245954	0.8
626345	4244891	0.016	628853	4246303	0.8

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 50 shows the highest 24-hour and annual concentrations of PM_{2.5} at ten sensitive receptors within SJVAPCD for Alternatives 1C, 2C, and 6C. All annual concentrations are less than SJVAPCD's threshold of 2.08 µg/m³ and the 24-hour threshold of 10.4 µg/m³.

Table 50. Alternatives 1C, 2C, and 6C PM_{2.5} Concentration Results in SJVAPCD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
625817	4191006	0.00	625902	4191122	0.7
625829	4190985	0.00	625890	4191102	0.7
625839	4191047	0.00	625881	4191090	0.7
625834	4191033	0.00	625912	4191131	0.7
625853	4191056	0.00	625873	4191079	0.7
625845	4190980	0.00	625917	4191145	0.7
625864	4191035	0.00	625910	4191094	0.7
625871	4190991	0.00	625921	4191108	0.7
625859	4190975	0.00	625920	4191159	0.7
625881	4191090	0.00	625927	4191119	0.7

x, y = universal transverse Mercator coordinates
µg/m³ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 51 shows the highest 24-hour and annual concentrations of PM_{2.5} at ten sensitive receptors within BAAQMD for Alternatives 1C, 2C, and 6C. All annual concentrations are less than BAAQMD's threshold of 0.3 µg/m³. The BAAQMD has not developed significance thresholds for 24-hour PM_{2.5}.

Table 51. Alternatives 1C, 2C and 6C PM_{2.5} Concentration Results in BAAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
619931	4201595	0.19	621178	4192916	18.7
620287	4194440	0.13	619931	4201595	17.7
619741	4203197	0.13	620399	4194439	16.2
620354	4195129	0.11	620428	4194440	16.0
620743	4198374	0.11	620743	4198374	15.7
622827	4187324	0.11	620401	4194459	15.2
620329	4194438	0.11	619168	4194835	15.2
620605	4196781	0.11	620544	4195160	15.0
620544	4195160	0.10	620497	4194454	15.0
620286	4194466	0.10	620425	4194459	14.8

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Respirable Particulate Matter Less than 10 Microns (PM₁₀) Results

Yolo-Solano Air Quality Management District

Table 52 shows the 10 highest 24-hour and annual concentrations of PM₁₀ at sensitive receptors within YSAQMD's jurisdiction for Alternatives 1C, 2C, and 6C. All annual concentrations are less than YSAQMD's threshold of 20 µg/m³ and all 24-hour concentrations are less than the 50 µg/m³ threshold.

Table 52. Alternatives 1C, 2C, and 6C PM₁₀ Concentration Results in YSAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
628700	4246675	0.55	628765	4248838	8.7
629840	4255395	0.51	628700	4246675	8.3
628765	4248838	0.39	629840	4255395	8.1
628808	4248836	0.34	628808	4248836	7.8
629006	4252595	0.26	618973	4236541	7.7
629951	4255379	0.25	629006	4252595	7.6
628754	4248892	0.25	618991	4236436	6.6
627501	4254071	0.24	628754	4248892	6.3
628816	4248877	0.23	625403	4244478	6.2
628784	4248943	0.18	628816	4248877	6.0

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District

Table 53 shows the 10 highest 24-hour and annual concentrations of PM₁₀ at sensitive receptors within SMAQMD for Alternatives 1C, 2C, and 6C. All annual concentrations are less than SMAQMD's threshold of 1.0 µg/m³. The results show that there may be exceedances of SMAQMD's 24-hour threshold of 2.5 µg/m³ at 287 receptor locations.

Table 53. Alternatives 1C, 2C, and 6C PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
629188	4248305	0.13	627684	4245223	6.7
629476	4252488	0.12	628189	4245468	6.0
629242	4247944	0.12	628380	4245780	5.6
629239	4247763	0.12	626345	4244891	5.5
629271	4254969	0.11	628023	4245146	5.4
629580	4254965	0.10	629271	4254969	5.3
626518	4244939	0.10	626518	4244939	5.2
629830	4255041	0.10	628739	4246274	5.1
629807	4251753	0.10	628503	4245954	5.0
628503	4245954	0.10	628853	4246303	5.0

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 54 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SJVAPCD for Alternatives 1C, 2C, and 6C. All annual concentrations are less than SJVAPCD's threshold of $2.08 \mu\text{g}/\text{m}^3$. The results show that there would not be exceedances of SJVAPCD's 24-hour threshold of $10.4 \mu\text{g}/\text{m}^3$

Table 54. Alternatives 1C, 2C and 6C PM10 Concentration Results in SJVAPCD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
625817	4191006	0.01	625920	4191159	3.8
625829	4190985	0.01	625917	4191145	3.8
625834	4191033	0.01	625912	4191131	3.8
625839	4191047	0.01	625902	4191122	3.8
625845	4190980	0.01	625924	4191182	3.8
625853	4191056	0.01	625922	4191202	3.8
625859	4190975	0.01	625927	4191119	3.8
625864	4191035	0.01	625890	4191102	3.8
625871	4190991	0.01	625936	4191127	3.8
625873	4191079	0.01	625921	4191108	3.8

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 55 shows the 10 highest 24-hour and annual concentrations of PM10 at the six sensitive receptors within BAAQMD for Alternatives 1C, 2C, and 6C. BAAQMD has not developed thresholds for annual or 24-hour PM10 concentrations.

Table 55. Alternatives 1C, 2C and 6C PM10 Concentration Results in BAAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
619931	4201595	1.14	621178	4192916	107.6
619741	4203197	0.79	619931	4201595	99.8
620287	4194440	0.73	620399	4194439	93.3
622827	4187324	0.64	620428	4194440	91.5
620743	4198374	0.63	620743	4198374	90.9
620354	4195129	0.61	619168	4194835	88.2
620605	4196781	0.58	620401	4194459	86.5
620544	4195160	0.57	620497	4194454	86.3
620329	4194438	0.57	620544	4195160	86.1
620357	4194438	0.54	620425	4194459	83.9

x, y = universal transverse Mercator coordinates

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Separate Corridors Option (SCO)

SCO - Alternative 9 Results

The SCO option consisted of only one alternative. The modeling analysis for Alternative 9 included sensitive receptors located in close proximity to proposed construction activities.

DPM Chronic Non-cancer Hazard and Cancer Risk Results

Yolo-Solano Air Quality Management District

The Separate Corridors Option does not travel through or near receptors within the jurisdiction of the YSAQMD. Consequently, no exceedance of YSAQMD thresholds at receptors within the YSAQMD would occur.

Sacramento Metropolitan Air Quality Management District

Table 56 shows the 10 receptors with the highest chronic health risks for Alternative 9 within SMAQMD. As Table 56 shows none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, the Alternative 9 would not result in a chronic non-cancer health hazards to sensitive receptors.

Table 56. Alternative 9 Chronic and Carcinogenic Health Risk Results in SMAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
630499	4234465	0.019	57
629772	4233285	0.018	55
630470	4234482	0.013	40
629804	4233348	0.012	35
630534	4234655	0.009	29
630457	4234587	0.009	26
630441	4234585	0.008	24
630485	4234660	0.008	23
630453	4234627	0.007	23
629853	4233358	0.007	22

x, y = universal transverse Mercator coordinates

Table 56 also shows the highest carcinogenic risk results for Alternative 9. All 10 sensitive receptors provided in the table and a total of 52 modeled sensitive receptors along the pipeline corridor and within the jurisdiction of SMAQMD show results greater than the 10 in one million threshold. This risk is associated with construction of the SCO's fish screens and operable barriers in this area.

San Joaquin Valley Air Pollution Control District

Table 57 shows the 10 receptors with the highest chronic health risks for San Joaquin County. As Table 57 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternative 9 would not result in a chronic non-cancer health hazards to sensitive receptors.

Table 57. Alternative 9 Chronic and Carcinogenic Health Risk Results in SJVAPCD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
627228.4	4186343	0.001	4
627260.2	4186346	0.001	4
627206.3	4186307	0.001	4
627261.8	4186297	0.001	3
627315.8	4186309	0.001	3
627293.4	4186287	0.001	3
627341.0	4186261	0.001	2
633160.1	4194033	0.001	2
633153.6	4194031	0.001	2
627551.7	4186132	0.000	1

x, y = universal transverse Mercator coordinates

Table 57 also shows the carcinogenic risk results. Of the 10 sensitive receptors with the highest cancer risk within SJVAPCD, none show risks exceeding the 10 in one million threshold.

Bay Area Air Quality Management District

Table 58 shows the 10 receptors with the highest chronic non-cancer HQs and carcinogenic health risks within BAAQMD. As Table 58 shows, none of the sensitive receptors would have a chronic non-cancer HQ exceeding 1. Consequently, Alternative 9 would not result in a chronic non-cancer health hazards to sensitive receptors.

Table 58. Alternative 9 Chronic and Carcinogenic Health Risk Results in BAAQMD

x	y	Chronic Hazard Quotient	Cancer Risk per Million
627275	4187011	0.003	8
627271	4187085	0.002	8
626819	4186350	0.002	5
628279	4190037	0.001	4
626784	4186218	0.001	4
628549	4189426	0.001	3
626675	4186290	0.001	3
626839	4186003	0.001	2
626841	4185989	0.001	2
628550	4189157	0.001	2

x, y = universal transverse Mercator coordinates

Table 58 also shows the carcinogenic risk results. Of the 10 sensitive receptors with the highest cancer risk in BAAQMD, none were found to exceed the 10 in one million risk threshold.

Fine Particulate Matter Less than 2.5 Microns (PM2.5) Results

Yolo-Solano Air Quality Management District

The Separate Corridors Option does not travel through or near receptors within the jurisdiction of the YSAQMD. Consequently, no exceedances of thresholds at receptors within the YSAQMD would occur.

Sacramento Metropolitan Air Quality Management District

Table 59 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within SMAQMD for Alternative 9. All annual concentrations are less than SMAQMD's threshold of 0.6 $\mu\text{g}/\text{m}^3$. The SMAQMD does not have a 24-hour PM2.5 significance threshold.

Table 59. Alternative 9 PM2.5 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
630499	4234465	0.45	630499	4234465	20.7
629772	4233285	0.42	630470	4234482	16.2
630470	4234482	0.32	629344	4233195	14.2
629804	4233348	0.27	630410	4234078	13.5
630534	4234655	0.23	629337	4233221	13.4
630457	4234587	0.21	630489	4233997	12.5
630441	4234585	0.20	630388	4234038	12.2
630485	4234660	0.19	629354	4233265	12.0
630453	4234627	0.18	629307	4233201	12.0
630452	4234636	0.18	630457	4234587	11.9

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 60 shows the 10 highest 24-hour and annual concentrations of PM2.5 at sensitive receptors within SJVAPCD for Alternative 9. All annual concentrations are less than SJVAPCD's threshold of 2.08 $\mu\text{g}/\text{m}^3$, and 24-hour concentrations at six receptor locations would exceed SJVAPCD's threshold of 10.4 $\mu\text{g}/\text{m}^3$.

Table 60. Alternative 9 PM2.5 Concentration Results in SJVAPCD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
627228	4186343	0.02	633615	4235546	18.3
627206	4186307	0.02	633574	4235545	17.0
627260	4186346	0.02	633499	4235497	16.9
633160	4194033	0.02	633744	4235357	16.8
633154	4194031	0.02	634092	4234779	13.7
627262	4186297	0.01	635957	4234360	10.6
627316	4186309	0.01	636005	4234298	10.0
627293	4186287	0.01	634689	4234302	7.0
627341	4186261	0.01	635960	4234509	6.9
632880	4195153	0.01	633160	4194033	3.9

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 61 shows the highest 24-hour and annual concentrations of PM2.5 at the six sensitive receptors within BAAQMD for Alternative 9. All annual concentrations are less than BAAQMD's threshold of 0.3 µg/m³. The BAAQMD has not developed significance thresholds for 24-hour PM2.5.

Table 61. Alternative 9 PM2.5 Concentration Results in BAAQMD

Annual (µg/m ³)			24-hour (µg/m ³)		
x	y	Concentration	x	y	Concentration
627275	4187011	0.05	627275	4187011	3.5
627271	4187085	0.04	628279	4190037	3.5
626819	4186350	0.03	627271	4187085	3.5
628279	4190037	0.02	626819	4186350	3.1
626784	4186218	0.02	626960	4185693	2.8
626675	4186290	0.01	626841	4185989	2.8
626839	4186003	0.01	626839	4186003	2.8
628549	4189426	0.01	626840	4185974	2.8
626841	4185989	0.01	626841	4185966	2.8
626819	4185993	0.01	626840	4185959	2.7

x, y = universal transverse Mercator coordinates

µg/m³ = micrograms per cubic meter

Respirable Particulate Matter Less than 10 Microns (PM10) Results

Yolo-Solano Air Quality Management District

The Separate Corridors Option does not travel through or near receptors within the jurisdiction of the YSAQMD. Consequently, no exceedances of thresholds at receptors within the YSAQMD would occur.

Sacramento Metropolitan Air Quality Management District

Table 62 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SMAQMD for Alternative 9. SMAQMD's annual threshold of 1.0 µg/m³ is exceeded at 17 receptor locations. The results also show that there may be exceedances of SMAQMD's 24-

hour threshold of 2.5 $\mu\text{g}/\text{m}^3$ at the 10 highest receptor concentrations shown in Table 62 and at 435 total receptor locations.

Table 62. Alternative 9 PM10 Concentration Results in SMAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
6304989	4234465	2.9	630498.7	4234465	131.4
629772	4233285	2.6	630470.4	4234482	102.5
630470	4234482	2.0	629343.9	4233195	90.8
629804	4233348	1.7	630409.8	4234078	85.8
630534	4234655	1.5	629337.3	4233221	85.7
630457	4234587	1.3	630488.6	4233997	78.1
630441	4234585	1.2	630387.9	4234038	77.6
630485	4234660	1.2	629307.3	4233201	76.9
630453	4234627	1.2	629353.9	4233265	76.3
630452	4234636	1.1	630456.9	4234587	76.1

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

San Joaquin Valley Air Pollution Control District

Table 63 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within SJVAPCD for Alternative 9. All annual concentrations are less than SJVAPCD's threshold of 2.08 $\mu\text{g}/\text{m}^3$, and there may be exceedances of SJVAPCD's 24-hour concentration threshold of 10.4 $\mu\text{g}/\text{m}^3$ at 24 locations.

Table 63. Alternative 9 PM10 Concentration Results in SJVAPCD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
633160	4194033	0.1	633614.9	4235546	114.0
633154	4194031	0.1	633573.9	4235545	105.6
627228	4186343	0.1	633499.2	4235497	105.5
627206	4186307	0.1	633744.0	4235357	103.1
627260	4186346	0.1	634092.2	4234779	83.7
627262	4186297	0.1	635957.3	4234360	66.5
627316	4186309	0.1	636005.1	4234298	62.5
627293	4186287	0.1	634689.1	4234302	43.3
627341	4186261	0.0	635960.4	4234509	42.7
632880	4195153	0.0	633160.1	4194033	25.8

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Bay Area Air Quality Management District

Table 64 shows the 10 highest 24-hour and annual concentrations of PM10 at sensitive receptors within BAAQMD for Alternative 9. BAAQMD has not developed thresholds for annual or 24-hour PM10 concentrations.

Table 64. Alternative 9 PM10 Concentration Results in BAAQMD

Annual ($\mu\text{g}/\text{m}^3$)			24-hour ($\mu\text{g}/\text{m}^3$)		
x	y	Concentration	x	y	Concentration
627275	4187011	0.2	627275.1	4187011	18.0
627271	4187085	0.2	627271.4	4187085	17.7
626819	4186350	0.1	628278.9	4190037	16.9
628279	4190037	0.1	626819.2	4186350	14.5
626784	4186218	0.1	626960.4	4185693	12.1
626675	4186290	0.1	626841.0	4185989	12.0
626839	4186003	0.1	626839.0	4186003	11.9
626841	4185989	0.1	626839.8	4185974	11.8
628549	4189426	0.1	626841.3	4185966	11.7
626819	4185993	0.1	626840.2	4185959	11.6

x, y = universal transverse Mercator coordinates
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

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Appendix A. Modeling Protocol

Health Risk Protocol Parameters

Contacts	
BAAQMD	Virginia Lau/Phil Martin
SMAQMD	Karen Huss/Rachel Dubose
YSAQMD	Matt Jones
SJVAPCD	Leland Villalvazo/Patia Siong/Dan Barber
URS	Tim Rimpou, Tin Cheung, Avanti Tamhane, Jon Tamimi, Megan Giglini
AERMOD Modeling Parameters	
Screening Tables	Are screening tables used?
BAAQMD	Yes, but cannot be used for linear construction projects.
SMAQMD	No.
YSAQMD	No.
SJVAPCD	Yes. Tools are available for highway truck travel; diesel internal combustion engines; truck idling; truck travel (50-meter segments).
URS' Anticipated Approach	No screening tables will be used. Screening level analyses will be based on AERSCREEN modeling.
Source Representation – Area, volume, open pit, other	What type of AERMOD source should be used to characterize PM2.5 fugitive dust and vehicle exhaust?
BAAQMD	Multiple area sources. Could also justify the use of a volume source, but would have to look at equipment information to figure out appropriate release height.
SMAQMD	PM10 dispersion modeling guidance parameters are appropriate to use for Health Risk Assessment Multiple volume sources with a release height of 5 meters. Each acre of project site should have at least four volume sources.
YSAQMD	If over a large area, use area sources. If over a small concentrated area, use volume sources with a release height of 3 meters.
SJVAPCD	SJVAPCD will allow the use of area or volume source. Whichever option is picked, URS must provide justification.
URS' Anticipated Approach	Multiple area sources based on changes in the magnitude of emission sources. Initial vertical release for dust emissions is 1 meter and 5 meters for vehicle exhaust. ²
Use on-road emission sources?	Should on-road emission sources be included outside of the project site?
BAAQMD	Consider on-road vehicles within 1,000 feet of receptors. Would need to justify the criteria.
SMAQMD	Recommend evaluating on-road truck emissions that occur only on the project site, but also suggest including all on-road emissions from the project segment being modeled that is occurring within the borders of Sacramento County, or suggest a radius and justify it.

² Based on South Coast Air Quality Management District (SCAQMD) final Localized Significance Threshold Methodology (July 2008), which states that for exhaust from construction equipment "The release height is assumed to be 5 meters. This represents the mid-range of the expected plume rise from frequently used construction equipment during daytime atmospheric conditions."

Contacts	
YSAQMD	Only concerned with the travel on local/arterial roads and roads with receptors within 500 feet. Suggested plotting out routes and determining where receptors are 500 feet from the road.
SJVAPCD	SJVAPCD recommends only evaluating on-site TAC emissions and impacts.
URS' Anticipated Approach	URS determined that all the on-road DPM emissions would contribute to 0.4% of total DPM emissions. Within 1 mile, the on-road DPM emissions would only contribute to 0.04% of the total DPM emissions. Therefore, URS proposes focusing on on-site emissions only.
Meteorological Data	
BAAQMD	Met data provided for Contra Costa Power. Can use one year for construction modeling. If you have five years of data, look at the worst case year.
SMAQMD	SMAQMD suggested using AERMOD processed met data for Executive Airport. SMAQMD provided that met data to URS.
YSAQMD	Suggested using the met data from SMAQMD.
SJVAPCD	Pre-processed format available on SJVAPCD's website. SJVAPCD recommends using the Stockton met data.
URS' Anticipated Approach	Five years of met data from Sacramento Executive Airport for locations with the SMAQMD and YSAQMD district boundaries. Five years of met data from Stockton (supplied by SJVAPCD) for locations within the SJVAPCD district boundary. Five years of met data from Contra Costa power tower for locations within the BAAQMD district boundary. However, to reduce processing time, URS will only run AERMOD for the worst-case scenario met year to estimate annual concentrations (2002 for Sacramento Executive Airport, 2009 for Stockton, and 2004 for Contra Costa. All five model years run to estimate 24-hour concentrations.
Default regulatory options	
BAAQMD	
SMAQMD	
YSAQMD	
SJVAPCD	Use regulatory default options for dispersion modeling.
URS' Anticipated Approach	Use regulatory default options for dispersion modeling.
Urban Options	
BAAQMD	
SMAQMD	
YSAQMD	Rural.
SJVAPCD	Rural.
URS' Anticipated Approach	Use of Rural Area option. Land use sector analysis showed that the majority of the project area is rural.
Health Risk Assessment Methods	
Significance Thresholds	
BAAQMD	What significance thresholds are being used by each District? Increased Cancer Risk > 10 in one million. Increased Chronic and Acute Hazard Index > 1.0. PM _{2.5} concentration increase > 0.3 µg/m ³ (for exhaust emissions only) ³

³ The BAAQMD's Air Quality CEQA Thresholds of Significance were challenged by an order issued March 5, 2012, in *California Building Industry Association v. BAAQMD*, Alameda Superior Court Case No. RGI0548693. The order requires the BAAQMD thresholds to be subject to further environmental review. The claims made in the case concerned the CEQA impacts of adopting the thresholds (i.e., how the thresholds would affect land use development patterns), and petitioners argued that the thresholds for Health Risk Assessments encompassed issues not addressed by CEQA. URS proposes using the 2011 thresholds

Contacts	
SMAQMD	No quantitative thresholds for construction projects, but can use thresholds for stationary sources. For stationary sources: significant cancer risk equals risk > 10 in one million at any off-site receptor. Ground-level concentration of TACs that would result in a Hazard Index > 1 at any off-site receptor.
YSAQMD	No quantitative thresholds for mobile sources, but can use thresholds for stationary source. Increase in cancer risk > 10 in one million at any off-site receptor. Ground-level concentration that would result in a Hazard Index > 1 for MEI.
SJVAPCD	No quantitative thresholds for mobile sources. Can use the TAC thresholds for stationary sources: Increase in cancer risk > 10 in one million at any off-site receptor. Ground-level concentration that would result in a Hazard Index > 1 for MEI. Does not apply to intermittent sources (less than 200 hours/year).
URS' Anticipated Approach	Cancer risk > 10 in one million. Hazard Index > 1 (Chronic only, because DPM does not pose an acute risk). PM _{2.5} concentration increase > 0.3 µg/m ³ .
Specific TACs to be modeled	What TACs should be included within the HRA for construction activities?
BAAQMD	DPM only. Would not recommend looking at gaseous components of diesel fuel, because DPM factor already accounts for them. Could potentially look at gaseous components from gasoline equipment, if BAAQMD believes there will be a large number. BAAQMD no longer recommends looking at acrolein.
SMAQMD	DPM. Discuss other TACs qualitatively.
YSAQMD	DPM. YSAQMD is not concerned with other TACs.
SJVAPCD	DPM.
URS' Anticipated Approach	DPM only due to recommendations of air districts, and the low level of risk from other toxics.
Use of exposure durations of less than 9 years	Should an exposure of less than nine years be used?
BAAQMD	Yes, can use exact timeframe of the project. Must use age sensitivity factor for short-term projects.
SMAQMD	Based on OEHA guidance.
YSAQMD	Based on OEHA guidance.
SJVAPCD	SJVAPCD guidance states the use of 70-year time frame, but this guidance may apply to longer-term sources (results in the application factor of 4.1453E-04).
URS' Anticipated Approach	URS proposes calculating a 70-year cancer risk, but multiplying it by the exact number of years (7-9 years), and an age sensitivity factor.
Adult or child breathing rates	Should adult or child breathing rates be used?
BAAQMD	Child breathing rate for construction projects.
SMAQMD	Based on OEHA guidance.
YSAQMD	Based on OEHA guidance.
SJVAPCD	Use of 393 liters per kilogram, which leads to an adjustment factor of 4.1453E-04 (multiply DPM ground concentration for each source by adjustment factor).

for impact analysis, given the OEHA guidance for cancer risk thresholds, and the EPA significant impact levels for PM_{2.5} concentrations (BAAMQD, 2010)

Contacts	
URS' Anticipated Approach	URS proposes using the child breathing rate of 581 liters per kilogram, since the construction timeframe is 9 years or less. OEHHA guidance (OEHHA, 2003) states that for periods between 2-9 years, the child breathing rate should be used.
Receptor grid	What is the District's expectation for spacing of receptor grids?
BAAQMD	For cases with emissions from short stacks or vents and a close property line, a receptor spacing of 10 meters may be sufficient.
SMAQMD	SMAQMD recommends that the spacing of a receptor grid be 10 meters. Discrete receptors shall be added to ensure that specific nearby sensitive receptors are represented in the model.
YSAQMD	If receptors are greater than 500 feet from the site, YSAQMD is not too concerned with modeling. For less than 500 feet, setup receptor grids with 10-meter spacing.
SJVAPCD	For Cartesian receptor grid: 25-meter spacing on the facility boundary: <ul style="list-style-type: none"> • 25-meter spacing from Facility Boundary to 100 • 50-meter spacing from 100 to 250 meters • 100-meter spacing from 250 to 500 meters • 250-meter spacing from 500 to 1000 meters • 500-meter spacing from 1000 to 2000 meters Leland Villalvazo (SJVAPCD) also suggested looking at receptors up to 2 kilometers.
URS' Anticipated Approach	In lieu of Cartesian receptor grids, URS proposes to use the 12,874 discrete Cartesian receptors as included within the BDCP GIS. This includes receptors within the 2 kilometer buffer area of construction emission sources, but outside of the construction footprint.

AERMOD	an atmospheric dispersion modeling system
BAAQMD	Bay Area Air Quality Management District
CEQA	California Environmental Quality Act
DPM	diesel particulate mater
EPA	United States Environmental Protection Agency
HRA	health risk assessment
OEHHA	Office of Environmental Health Hazard Assessment
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
MEI	maximally exposed individual
TAC	toxic air contaminant
URS	URS Corporation Americas, Inc.
YSAQMD	Yolo-Solano Air Quality Management District
µg/m3	micrograms per cubic meter

General Conformity Determination

22E.1 Introduction

This appendix provides the general conformity determination for the applicant-preferred alternative (APA) of the Bay Delta Conservation Plan (BDCP, or project). A general conformity determination is required by Section 176 of the Clean Air Act (CAA). The CAA requires states to submit a state implementation plan (SIP) for areas in nonattainment for federal standards. Section 176(c)(1) of the CAA prohibits federal agencies from engaging in, supporting, or providing financial assistance for licensing, permitting, or approving any activities that do not conform to an approved SIP.

The U.S. Environmental Protection Agency (EPA) enacted the federal general conformity regulation in 1993 (40 Code of Federal Regulations [CFR] Parts 5, 51, and 93). The purpose of the general conformity rule is to ensure that federal actions do not generate emissions that interfere with state and local agencies' SIPs and emission-reduction strategies to ensure attainment of the national ambient air quality standards (NAAQS). Specifically, projects that receive federal funding or require federal approval must demonstrate that they would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions toward attainment. Because the project is receiving federal funds and approvals from the U.S. Department of the Interior Bureau of Reclamation (Reclamation) (Reclamation), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS) (Federal lead agencies), all direct and indirect emissions generated by the project are subject to the general conformity rule.

22E.1.1 Regulatory Status of the Plan Area

The Plan Area is subject to air quality regulations developed and implemented at the federal, state, and local levels. At the federal level, the EPA is responsible for implementation of the CAA. Some portions of the CAA (e.g., certain mobile-source and other requirements) are implemented directly by EPA. Other portions of the CAA (e.g., stationary-source requirements) are implemented by state and local agencies.

Responsibility for attaining and maintaining air quality in California is divided between the California Air Resources Board (ARB) and regional air quality districts. The Yolo-Solano Air Quality Management District (YSAQMD), Sacramento Metropolitan Air Quality Management District (SMAQMD), Bay Area Air Quality Management District (BAAQMD), and San Joaquin Valley Air Pollution Control District (SJVAPCD) have jurisdiction over local air quality within the Plan area.

Under the CAA, YSAQMD, SMAQMD, BAAQMD, and SJVAPCD are required to develop air quality plans for nonattainment criteria pollutants in their respective air districts. The *1994 Sacramento Area Regional Ozone Attainment Plan* was prepared to address ozone precursors within the Sacramento Federal Nonattainment Area (SFNA) following the region's serious nonattainment designation for the 1-hour ozone NAAQS in November 1991. The *Sacramento Regional 8-Hour Attainment and Reasonable Further Progress Plan* has also been adopted to address the region's

nonattainment status for the 8-hour ozone NAAQS. Counties in the SFNA (Sacramento, Yolo, Placer, El Dorado, Solano, Sutter, and Butte) have also adopted the *Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan* (2012 Plan).

BAAQMD and SJVAPCD have also adopted air quality plans to improve air quality, protect public health, and protect the climate. The *Bay Area 2001 Ozone Attainment Plan* was adopted to reduce ozone and achieve the NAAQS ozone standard in the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD also adopted a resignation plan for carbon monoxide (CO) in 1994. SJVAPCD's *2007 Ozone Plan* contains a comprehensive list of regulatory and incentive-based measures to reduce ozone precursors within the San Joaquin Valley Air Basin (SJVAB). SJVAPCD's *2007 PM10 Maintenance Plan*, *2008 PM2.5 Plan*, and *2012 PM2.5 Plan* likewise include strategies to reduce particulate matter (PM) emissions throughout the air basin.

22E.1.2 General Conformity Requirements

The general conformity rule applies to all federal actions located in nonattainment and maintenance areas that are not exempt from general conformity (are either covered by Transportation Conformity or listed in the rule), are not covered by a presumed-to-conform approved list¹, or do not have clearly *de minimis* emissions. In addition, the general conformity rule applies only to direct and indirect emissions associated with the portions of any federal action that are subject to New Source Review for which a Federal permitting agency has directly caused or initiated, has continued program responsibility for, or can practically control (i.e., stationary industrial sources requiring air quality permits from local air pollution control agencies are not subject to general conformity).

Federal projects must undertake an evaluation to determine whether all project emission sources are subject to the general conformity rule. The analysis includes a stepwise process in which the Federal agency determines the following.

1. **Is the emission source located in a Federal attainment area?** If yes, the emission source is not subject to general conformity and no additional analysis is required. If no, document whether the emission source is located in a nonattainment or maintenance area and proceed to step 2.
2. **Does one or more of the specific exemptions apply to the project?** If yes, the project is exempt from general conformity and no further analysis is required. If no, proceed to step 3.
3. **Has the Federal agency included the action on its list of presumed-to-conform actions?** If yes, the project is presumed to conform to the applicable SIP and the requirements of general conformity are satisfied. If no, proceed to step 4.
4. **Are the total direct and indirect emissions below the *de minimis* thresholds?** If yes, the project would not cause or contribute to new violations of air quality standards; the requirements of general conformity are satisfied. If no, the applicant must perform a conformity determination.

A general conformity determination is made by satisfying any of the following requirements.

- Showing that the emission increases caused by the Federal action are included in the SIP.

¹ Category of activities designated by a Federal agency as having emissions below *de minimis* levels or otherwise do not interfere with the applicable SIP or the attainment and maintenance of the NAAQS.

- Demonstrating that the state agrees to include the emission increases in the SIP.
- Offsetting the action's emissions in the same or nearby area.
- Mitigating to reduce the emission increase.
- Utilizing a combination of the above strategies.

The general conformity rule states that the applicability analysis can be (but is not required to be) completed concurrently with any analysis required under the National Environmental Policy Act (NEPA). The applicability analysis for the proposed project is described in Section E.1.8, *Applicability Analysis*.

22E.2 Description of the Federal Action

The federal agency is only required to conduct a general conformity evaluation for the specific Federal action associated with the selected alternative for a project or program (U.S. Environmental Project Agency 1994). The positive conformity determination must be submitted before the federal action is approved. Each federal agency is responsible for determining conformity of those proposed actions over which it has jurisdiction. Alternative 4A has been selected as the applicant-preferred alternative (APA). Construction and operation of the project under Alternative 4A would be identical to Alternative 4. Accordingly, emissions generated by Alternative 4A would be representative of emissions generated under Alternative 4. The general conformity determination presented in this appendix therefore relates to those activities pertaining to Alternatives 4 and 4A (henceforth referred to as Alternative 4/4A).

If the APA is modified such that it would generate a higher amount of emissions, the general conformity determination would be revised to reflect the changes before the finalization of the EIR/EIS. The project is described further in Section 22E.1.3 below.

22E.2.1 BDCP Alternative 4/4A

The BDCP is a comprehensive conservation strategy for the Sacramento–San Joaquin Delta (Delta) to advance the planning goal of restoring ecological functions of the Delta and improving water supply reliability in the state of California. The conservation strategy is designed to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework. The BDCP reflects the outcome of a multiyear collaboration between Department of Water Resources (DWR), Reclamation, state and federal fish and wildlife agencies, state and federal water contractors, nongovernmental organizations, agricultural interests, and the general public. The BDCP sets out a comprehensive conservation strategy for the Delta designed to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework.

The BDCP includes up to 21 conservation measures (CM) that will be taken to meet biological the goals and objectives. This general conformity determination covers direct and indirect emissions associated with construction and operation of CM1—Water Facilities and Operation. CM1 provides for the construction and operation of a new north Delta water conveyance facility to bring water from the Sacramento River in the north Delta to the existing water export pumping plants in the south Delta, as well as for the operation of existing south Delta export facilities.

Under Alternatives 4 and 4A, water would primarily be conveyed from the north Delta to the south Delta through pipelines/ tunnels. Water would be diverted from the Sacramento River through three fish-screened intakes on the east bank of the Sacramento River between Clarksburg and Courtland. Water would travel from the intakes to a sedimentation basin before reaching the tunnels. From the intakes water would flow into an initial single-bore tunnel, which would lead to an intermediate forebay on Glannvale Tract. From the southern end of this forebay, water would pass through an outlet structure into a dual-bore tunnel where it would flow by gravity to the south Delta. Water would then reach pumping plants to the northeast of the Clifton Court Forebay, where water would be pumped into the north cell of the expanded Clifton Court Forebay. The forebay would be dredged and redesigned to provide an area isolating water flowing from the new north Delta facilities. The expanded Clifton Court Forebay would be designed to provide water to Jones Pumping Plant 24 hours per day. A complete description of Alternative 4 is provided in Chapter 3, *Description of Alternatives*, Sections 3.4, 3.5.9, and 3.6.1. A complete description of Alternative 4A is provided in Appendix A, *Revisions to the Draft EIR/EIS*, Section 4.

22E.3 Air Quality Conditions in the Plan Area

The Plan Area encompasses the following three air basins: Sacramento Valley Air Basin (SVAB), SJVAB, and the SFBAAB.

22E.3.1 Climate and Meteorology

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. In general, the prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north. The mountains surrounding the SVAB create a barrier to airflow that can trap air pollutants under certain meteorological conditions. The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley (Yolo-Solano Air Quality Management District 2007).

The SJVAB has an inland Mediterranean climate that is characterized by warm, dry summers and cool winters. Although marine air generally flows into the basin from the Delta, the surrounding mountain ranges restrict air movement through and out of the valley. The vertical dispersion of air pollutants in the SJVAB is limited by the presence of persistent temperature inversion. Air pollutants tend to collect under an inversion, leading to higher concentrations of emitted pollutants. Conversely, precipitation and fog tend to reduce pollutant concentrations. Precipitation in the SJVAB decreases from north to south, with approximately 20 inches in the north, 10 inches in the middle, and less than 6 inches in the south (San Joaquin Valley Air Pollution Control District 2002).

The SFBAAB has a coast climate that is influenced by marine air flow and the basin's proximity to the San Francisco Bay. Bay breezes push air onshore during the daytime and draw air offshore at night. During the summer months, the bay helps to cool the warm onshore flows, while it warms the air during the winter months. This mediating effect keeps temperatures relatively consistent throughout the year. In the westernmost portion of the SFBAAB, which encompasses the study area, the bay wind patterns can concentrate and carry air pollutants from other cities to the region,

1 adding to the mix of pollutants that are emitted locally (Bay Area Air Quality Management District
2 2011).

3 **22E.3.2 Ambient Air Quality**

4 The existing air quality conditions in the Plan Area can be characterized by monitoring data
5 collected in the region. Air quality concentrations typically are expressed in terms of parts per
6 million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Table 22E-1 summarizes air quality
7 monitoring data from monitoring stations in the SVAB, SJVAB, and SFBAAB for the last 3 years for
8 which complete data are available. As shown in Table 22E-1, the monitoring stations have
9 experienced occasional violations of the NAAQS and California Ambient Air Quality Standards
10 (CAAQS) for all pollutants except CO and nitrogen dioxide (NO_2). However, in general, air quality is
11 improving in the region, as indicated by the declining number of measured violations.

1 **Table 22E-1. Ambient Air Quality Monitoring Data for the SVAB, SJVAB, SFBAAB (2011–2013)**

Pollutant Standards	SVAB (T Street & El Camino)			SJVAB (Stockton)			SFBAAB (Bethel Island & Concord)		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Ozone (O₃)									
Maximum 1-hour concentration (ppm)	0.100	0.104	0.091	0.089	0.097	0.080	0.091	0.098	0.082
Maximum 8-hour concentration (ppm)	0.087	0.092	0.068	0.068	0.083	0.067	0.078	0.087	0.075
Number of days standard exceeded ^a									
CAAQS 1-hour (>0.09 ppm)	1	1	0	0	1	0	0	1	0
CAAQS 8-hour (>0.070 ppm)	5	9	0	0	2	0	4	4	1
NAAQS 8-hour (>0.075 ppm)	1	4	0	0	6	0	2	2	0
Carbon Monoxide (CO)									
Maximum 8-hour concentration (ppm)	2.83	2.14	-	2.13	1.78	-	0.95	0.89	-
Maximum 1-hour concentration (ppm)	3.0	2.7	3.0	3.2	3.0	2.7	1.4	1.5	1.0
Number of days standard exceeded ^a									
NAAQS 8-hour (≥9 ppm)	0	0	0	0	0	0	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0	0	0	0	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0	0	0	0	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide (NO₂)									
State maximum 1-hour concentration (ppm)	57	62	59	62	78	62	35	32	33
State second-highest 1-hour concentration (ppm)	53	56	56	59	58	61	34	30	32
Annual average concentration (ppm)	13	12	12	16	14	15	6	6	-
Number of days standard exceeded									
CAAQS 1-hour (0.18 ppm)	0	0	0	0	0	0	0	0	0
Particulate Matter (PM₁₀)^b									
National ^c maximum 24-hour concentration (µg/m ³)	38.8	36.2	53.1	66.1	69.4	90.1	46.8	51.4	47.4
National ^c second-highest 24-hour concentration (µg/m ³)	38.1	33.6	45.4	53.0	58.2	69.4	44.3	29.5	45.5
State ^d maximum 24-hour concentration (µg/m ³)	42.2	36.7	92.3	70.1	70.0	95.5	49.5	52.3	50.7
State ^d second-highest 24-hour concentration (µg/m ³)	39.3	35.6	66.8	57.8	61.7	74.0	45.8	31.4	48.5
National annual average concentration (µg/m ³)	18.4	17.2	14.4	23.3	22.4	31.3	17.3	13.8	8.5
State annual average concentration (µg/m ³) ^e	19.2	17.8	-	24.1	22.8	32.0	17.9	14.1	-
Number of days standard exceeded ^a									
NAAQS 24-hour (>150 µg/m ³) ^f	0	0	-	0	0	0	0	0	0
CAAQS 24-hour (>50 µg/m ³) ^f	0	0	21	24	18	58	0	6	1

Pollutant Standards	SVAB (T Street & El Camino)			SJVAB (Stockton)			SFBAAB (Bethel Island & Concord)		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Particulate Matter (PM_{2.5})									
National ^c maximum 24-hour concentration (µg/m ³)	50.5	27.1	39.2	60.0	60.4	65.5	47.5	32.2	36.2
National ^c second-highest 24-hour concentration (µg/m ³)	47.8	26.7	35.9	53.1	45.0	64.4	39.7	30.0	29.5
State ^d maximum 24-hour concentration (µg/m ³)	50.5	40.8	40.2	65.5	60.4	66.5	47.5	32.2	36.2
State ^d second-highest 24-hour concentration (µg/m ³)	47.8	31.1	39.4	59.5	45.0	64.4	39.7	30.0	29.5
National annual average concentration (µg/m ³)	10.1	8.3	10.0	11.3	12.3	17.6	7.8	6.6	7.6
State annual average concentration (µg/m ³) ^e	10.1	-	10.1	14.0	12.4	-	7.9	6.6	7.6
Number of days standard exceeded ^a									
NAAQS 24-hour (>35 µg/m ³)	18	0	6	11	6	28	2	0	1
Sulfur Dioxide (SO₂)									
No data available									

Source: California Air Resources Board 2014a; United States Environmental Protection Agency 2014a.

ppm = parts per million.

NAAQS = National Ambient Air Quality Standards.

CAAQS = California Ambient Air Quality Standards.

µg/m³ = micrograms per cubic meter.

mg/m³ = milligrams per cubic meter.

> = greater than.

NA = not applicable.

^a An exceedance is not necessarily a violation.

^b National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

^c State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

^d Measurements usually are collected every 6 days.

^e State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

^f Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

22E.3.3 Mass Emissions

The ARB compiles an emissions inventory for all sources of emissions within the study area. This inventory is used by the YSAQMD, SMAQMD, BAAQMD, SJVAPCD, and ARB for regional air quality planning purposes and is the basis for the region's air quality plans, and includes such sources as stationary (e.g., landfills, electric utilities, mineral processes); area-wide (e.g., farming operations, construction/demolition activities, residential fuel combustion); and mobile sources (e.g., automobiles, aircraft, off-road equipment). The latest criteria pollutant emissions summary (2012) for counties in which the water conveyance facility would be located (Yolo, Sacramento, San Joaquin, Contra Costa) is summarized in Tables 22E-2 through 22E-5.

Table 22E-2. Yolo County Air Quality Emissions—2012

Source type	Annual emissions (tons per day)					
	ROG	CO	NO _x	SO _x	PM10	PM2.5
Stationary sources						
Total fuel combustion	0.14	1.81	2.93	0.26	0.46	0.46
Total waste disposal	0.07	0.00	0.00	0.01	0.00	0.00
Total cleaning and surface coatings	1.02	0.00	0.00	0.00	0.01	0.01
Total petroleum production and marketing	1.17	0.04	0.00	0.00	0.00	0.00
Total industrial processes	0.41	0.39	0.17	0.08	1.74	0.64
Total stationary sources	2.81	2.24	3.10	0.35	2.21	1.11
Area-wide sources						
Total solvent evaporation	2.30	0.00	0.00	0.00	0.00	0.00
Total miscellaneous processes	1.29	6.77	0.53	0.04	21.30	3.49
Total area-wide sources	3.59	6.77	0.53	0.04	21.30	3.49
Mobile sources						
Total on road mobile sources	2.50	23.64	7.13	0.02	0.49	0.27
Total off road mobile sources	1.99	11.71	5.72	0.01	0.30	0.27
Total mobile sources	4.49	35.35	12.85	0.03	0.79	0.54
Yolo County total	10.89	44.36	16.48	0.42	24.30	5.14
Source: California Air Resources Board 2013						

1 **Table 22E-3. Sacramento County Air Quality Emissions—2012**

Source type	Annual emissions (tons per day)					
	ROG	CO	NO _x	SO _x	PM10	PM2.5
Stationary sources						
Total fuel combustion	0.39	3.34	2.62	0.08	0.35	0.34
Total waste disposal	1.16	0.05	0.05	0.01	0.00	0.00
Total cleaning and surface coatings	4.43	0.00	0.00	0.00	0.00	0.00
Total petroleum production and marketing	2.47	0.01	0.01	0.00	0.00	0.00
Total industrial processes	1.06	0.54	0.24	0.28	1.27	0.48
Total stationary sources	9.51	3.94	2.92	0.37	1.62	0.82
Area-wide sources						
Total solvent evaporation	13.14	0.00	0.00	0.00	0.01	0.01
Total miscellaneous processes	8.19	37.20	2.98	0.13	21.78	7.84
Total area-wide sources	21.33	37.20	2.98	0.13	21.79	7.85
Mobile sources						
Total on road mobile sources	15.11	148.81	31.70	0.19	2.62	1.33
Total off road mobile sources	9.30	61.30	11.89	0.18	0.76	0.68
Total mobile sources	24.41	210.11	43.59	0.37	3.38	2.01
Sacramento County total	55.25	251.25	49.49	0.87	26.79	10.68
Source: California Air Resources Board 2013						

2 **Table 22E-4. San Joaquin County Air Quality Emissions—2012**

Source type	Annual emissions (tons per day)					
	ROG	CO	NO _x	SO _x	PM10	PM2.5
Stationary sources						
Total fuel combustion	0.34	2.97	5.04	1.33	0.22	0.21
Total waste disposal	1.59	0.10	0.07	0.03	0.04	0.03
Total cleaning and surface coatings	2.69	0.00	0.00	0.00	0.08	0.07
Total petroleum production and marketing	1.34	0.02	0.02	0.00	0.00	0.00
Total industrial processes	2.48	0.25	2.85	1.60	1.55	0.66
Total stationary sources	8.44	3.34	7.98	2.96	1.89	0.97
Area-wide sources						
Total solvent evaporation	6.73	0.00	0.00	0.00	0.00	0.00
Total miscellaneous processes	9.22	9.57	1.54	0.07	26.82	5.23
Total area-wide sources	15.95	9.57	1.54	0.07	26.82	5.23
Mobile sources						
Total on road mobile sources	7.82	69.94	23.17	0.09	1.52	0.91
Total off road mobile sources	4.38	19.77	5.04	0.08	0.40	0.33
Total mobile sources	12.20	89.71	28.21	0.17	1.92	1.24
San Joaquin County total	36.59	102.62	37.73	3.20	30.63	7.44
Source: California Air Resources Board 2013						

Table 22E-5. Contra Costa County Air Quality Emissions—2012

Source type	Annual emissions (tons per day)					
	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Stationary sources						
Total fuel combustion	2.56	11.20	13.44	5.98	0.58	0.58
Total waste disposal	0.42	0.16	0.28	0.03	0.00	0.00
Total cleaning and surface coatings	2.48	0.00	0.01	0.00	0.00	0.00
Total petroleum production and marketing	7.45	0.72	0.57	2.00	0.00	0.00
Total industrial processes	3.33	1.16	2.25	7.02	0.64	0.16
Total stationary sources	16.24	13.24	16.55	15.03	1.22	0.74
Area-wide sources						
Total solvent evaporation	8.48	0.00	0.00	0.00	0.00	0.00
Total miscellaneous processes	2.00	23.68	2.46	0.07	11.08	4.55
Total area-wide sources	10.48	23.68	2.46	0.07	11.08	4.55
Mobile sources						
Total on road mobile sources	11.24	111.62	23.88	0.15	1.96	1.01
Total off road mobile sources	2.81	9.83	5.50	0.44	0.31	0.27
Total mobile sources	14.05	121.45	29.38	0.59	2.27	1.28
Contra Costa County total	40.77	158.37	48.39	15.69	14.57	6.57

Source: California Air Resources Board 2013

22E.3.4 Federal Nonattainment Status and Conformity Applicably

Local monitoring data (Table 22E-1) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS. Table 22E-6 summarizes the attainment status of the Plan Area within SVAB, SJVAB, and SFBAAB with regard to the NAAQS.

Table 22E-6. Federal Attainment Status of the Plan Area within SVAB, SJVAB, and SFBAAB

Pollutant	SVAB	SJVAB	SFBAAB
Ozone	Severe Nonattainment	Extreme Nonattainment	Marginal Nonattainment
Carbon Monoxide	Moderate Maintenance ^a	Moderate Maintenance ^a	Moderate Maintenance ^a
Coarse Particulate Matter (PM ₁₀)	Moderate Maintenance ^a	Serious Maintenance	Attainment
Fine Particulate Matter (PM _{2.5})	Nonattainment ^a	Nonattainment	Nonattainment

Sources: U.S. Environmental Protection Agency 2014b; California Air Resources Board 2014b.

^a Applies only to a portion of the air basin that the Plan Area crosses (see Figures 22E-1 through 22E-4).

EPA's General Conformity Rule (40 CFR Parts 51 and 93) only applies to Federal actions that are taken in EPA-designated "nonattainment" or "maintenance" areas. Accordingly, as outlined in Section III.A of the General Conformity Rule, "only actions which cause emissions in designated nonattainment and maintenance areas are subject to the regulations". The general conformity

evaluation is made by comparing all emission sources (e.g., haul trucks, off-road equipment) located in nonattainment or maintenance areas to the applicable general conformity *de minimis* thresholds shown in Table 22E-7.

Table 22E-7. Federal General Conformity *de Minimis* Thresholds

Air Basin	Annual Air Pollutant Emissions in Tons per Year					
	ROG ^a	NO _x ^a	CO	PM10	PM2.5	SO ₂ ^b
Sacramento Valley Air Basin	25	25	100	100	100	100
San Joaquin Valley Air Basin	10	10	100	100	100	100
San Francisco Bay Area Air Basin	100	100	100	None	100	100

Source: 40 CFR 93.153

CO = carbon monoxide.

NO_x = oxides of nitrogen.

PM2.5 = particulate matter 2.5 microns in diameter or less.

PM10 = particulate matter 10 microns in diameter or less.

ROG = reactive organic gases.

SO₂ = sulfur dioxide

^a ROG and NO_x are precursors to ozone and NO_x is a precursor to PM. NO_x emissions in excess of 100 tons per year within federally designated PM10 or PM2.5 nonattainment or maintenance areas trigger a secondary PM threshold.

^b SO₂ is a precursor to PM2.5.

The majority of construction emissions would occur at construction sites along the water conveyance alignment. Emissions would also be generated along haul routes used to transport equipment and materials to construction sites. Figures 22E-1 through 22E-4 identify the federally-designated nonattainment and maintenance areas for ozone (ROG and NO_x), CO, PM10, and PM2.5 in the Plan Area relative to the project alignment and haul routes. Table 22E-8 summaries project construction activities that would occur within the federally-designated nonattainment and maintenance areas.

1 **Table 22E-8. Construction Activities Located Within Federally-Designated Nonattainment or Maintenance Areas**

Pollutant	Sacramento Valley Air Basin		
	Federal Designation (see Table 22E-6)	General Designation Boundaries (see Figures 22E-1 through 22E-4)	Project Sites Within Boundary (see Figures 22E-1 through 22E-4)
Ozone	Severe Nonattainment	Sacramento and Yolo counties, non-Lake Tahoe Air Basin areas of El Dorado and Placer counties, and eastern Solano and southern Sutter counties	Water conveyance alignment and material and equipment haul roads
CO	Moderate Maintenance	Urbanized areas of Sacramento, Placer, and Yolo counties	Material and equipment haul roads
PM10	Moderate Maintenance	Sacramento County	Water conveyance alignment and material and equipment haul roads within Sacramento County
PM2.5	Nonattainment	Sacramento County, western El Dorado and Placer counties, and eastern Yolo and Solano counties	Water conveyance alignment and material and equipment haul roads
Pollutant	San Joaquin Valley Air Basin		
	Federal Designation (see Table 22E-6)	General Designation Boundaries (see Figures 22E-1 through 22E-4)	Project Sites Within Boundary (see Figures 22E-1 through 22E-4)
Ozone (8 hr)	Extreme Nonattainment	All counties in SJVAPCD-portion of the SJVAB	Water conveyance alignment and material and equipment haul roads
CO	Moderate Maintenance	Stockton urbanized area	Material and equipment haul roads
PM10	Serious Maintenance	All counties in SJVAPCD-portion of the SJVAB	Water conveyance alignment and material and equipment haul roads
PM2.5	Nonattainment	All counties in SJVAPCD-portion of the SJVAB	Water conveyance alignment and material and equipment haul roads
Pollutant	San Francisco Bay Area Air Basin		
	Federal Designation (see Table 22E-6)	General Designation Boundaries (see Figures 22E-1 through 22E-4)	Project Sites Within Boundary (see Figures 22E-1 through 22E-4)
Ozone (8 hr)	Marginal Nonattainment	All areas in the SFBAAB except northern Sonoma County	Water conveyance alignment and material and equipment haul roads
CO	Moderate Maintenance	Urbanized areas of Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Solano, and Sonoma counties	Material and equipment haul roads
PM10	Attainment	-	-
PM2.5	Nonattainment	All areas in the SFBAAB except northern Sonoma County	Water conveyance alignment and material and equipment haul roads

2

The general conformity analysis considers all direct and indirect construction emissions associated with the project activities outlined in Table 22E-8. The analysis also evaluates emissions from long-term operations and maintenance (O&M) activities that would begin once construction is complete. Two timeframes are evaluated in the O&M analysis to capture anticipated changes in vehicle technologies and emission factors—2030 (early long-term, or ELT) and 2060 (late long-term, or LLT).

22E.4 Relationship to Other Environmental Analyses

A partially recirculated Draft EIS/EIR will be published for public review and comment in May 2015 providing an analysis of the APA (Alternative 4/4A), with publication of the Final EIS/EIR anticipated in December 2015. The partially recirculated Draft EIS/EIR presents the general conformity determination process and general findings in the general conformity determination for public and agency review, while the final general conformity determination will be published concurrent with the Record of Decision (ROD) for the Federal action.

The EIS/EIR was prepared consistent with NEPA and California Environmental Quality Act (CEQA) requirements. CEQA and NEPA requires an evaluation of air quality impacts associated with construction and operation of the proposed project. The analysis of impacts under NEPA and CEQA was evaluated using the local thresholds of significance established by the YSAQMD, SMAQMD, BAAQMD, and SJVAPCD.

22E.5 Emission Reduction Measures

22E.5.1 Onsite Environmental Commitments

Environmental commitments to reduce onsite construction emissions are identified in Appendix 3B, *Environmental Commitments*, of the partially recirculated Draft EIS/EIR. These commitments have been incorporated into the project design and are considered a condition of project approval. The environmental commitments represent all feasible actions to reduce onsite construction emissions. The environmental commitments outlined in the partially recirculated Draft EIS/EIR are described below. The BDCP proponents—Department of Water Resources (DWR) and six State Water Project (SWP) and Central Valley Project (CVP) water contractors—have primary implementation responsibility for the environmental commitments.

Construction Equipment Exhaust Reduction Plan

Prior to construction, BDCP proponents will develop a construction equipment exhaust reduction plan to reduce criteria air pollutants from construction equipment. The reduction plan will be provided to the appropriate Plan Area air districts for approval prior to construction. Control technology that achieves equivalent or greater reductions than those identified below may be specified as new emissions reduction technologies become available and cost-effective.

22E.5.1.1.1 *Off-Road Heavy-Duty Engines*

The reduction plan will require that equipment used to construct BDCP facilities achieve fleet-wide average criteria pollutant emissions rates for equipment greater than 50 horsepower that are equivalent to the use of a model year 2013 fleet. Prior to construction start for each major project feature BDCP proponents will ensure model year 2013 emissions rates are achieved by developing a-specific construction equipment exhaust reduction plan. Contractors may utilize a combination of newer engines, aftermarket controls, and retrofits to achieve the fleet-wide average performance standard. Potential strategies may include the following:

- Electrification of equipment
- Use of diesel particulate filters on non-electrified equipment.
- Use of compressed natural gas (CNG).
- Use of advanced engines (e.g., Tier 3 or Tier 4 certified engines).

The BDCP proponents will quantitatively demonstrate, through equipment-specific modeling, that fleet-wide average achieve criteria pollutant emissions rates for equipment greater than 50 horsepower that are equivalent to the use of a model year 2013 fleet have been achieved by the selected equipment and aftermarket controls. As noted in Appendix 22A, *Air Quality Analysis Methodology*, the Air Quality analysis and Health Risk Assessment have been performed based on model year 2013 emission factors obtained from the SMAQMD Construction Mitigation Calculator. The 2013 model year emission factors for each equipment piece are built from the zero-hour emissions rates, annual deterioration rates, and assumptions about engine operating hours.

In addition to the model year 2013 performance standard, the following best management practices will be incorporated into the reduction plan.

- Minimize idling time either by shutting equipment off when not in use or limiting the time of idling to 3 minutes (5 minutes required by 13 CCR 2449[d][3], 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by an ASE- certified mechanic and determined to be running in proper condition before it is operated.
- Ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0²) will be repaired immediately. Non-compliant equipment will be documented and a summary provided annually to the lead agency and air district. A visual inspection of all in-operation equipment will be made at least weekly by the contractor and witnessed monthly or more frequently by the proponent agency(ies), and a periodic summary of the visual survey results will be submitted by the contractor throughout the duration of the proposed project, except that the summary will not be required for any 30-day period in which no construction activity occurs. The summary will include the quantity and type of vehicles inspected, as well as the dates of each survey. The air districts or other officials may conduct periodic site inspections to determine compliance. Nothing in this measure will supersede other air district or state rules or regulations.

² Based on the Ringelmann scale, which measures the density of smoke in the air.

22E.5.1.1.2 Marine Vessels

Prior to construction start for each major project feature BDCP proponents will ensure that all marine vessels used to construct BDCP facilities utilize EPA certified Tier 3 or newer engines. As noted in Appendix 22A, *Air Quality Analysis Methodology*, the air quality analysis and HRA have been performed based on model year 2010 emission factors (Tier 3 compliance for new engines) obtained from the ARB.

22E.5.1.1.3 Heavy Duty Haul Trucks

Prior to construction start for each major project feature BDCP proponents will ensure that all on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used to construct BDCP facilities comply with EPA 2007 on-road emission standards for particulate matter less than 10 microns in diameter (PM₁₀) and nitrogen oxides (NO_x) (0.01 g/bhp-hr and 0.20 g/bhp-hr, respectively). These PM₁₀ and NO_x standards were phased in through the 2007 and 2010 model years on a percent of sales basis (50% of sales in 2007 to 2009 and 100% of sales in 2010). As noted in Appendix 22A, *Air Quality Analysis Methodology*, the Air Quality analysis and Health Risk Assessment have been performed based on model year 2010 emission factors obtained from the ARB's EMFAC2014 model.

22E.5.1.1.4 Locomotives

Prior to construction start for each major project feature BDCP proponents will ensure that all diesel tunneling locomotives used to construct BDCP facilities utilize EPA certified Tier 4 or newer engines.

Fugitive Dust Control

BDCP proponents will implement basic and enhanced control measures at all construction and staging areas to reduce construction-related fugitive dust. This commitment is related to AMM35, Fugitive Dust Control, described in BDCP Appendix 3.C. The following measures are based on the SMAQMD's CEQA guidelines, and are in conformance with the BAAQMD, SJVAPCD, and YSAQMD fugitive dust control requirements.

22E.5.1.1.5 Basic Fugitive Dust Control Measures

BDCP proponents will ensure that the following measures will be implemented to control dust during construction activities.

- Water will be applied to all exposed surfaces as reasonably necessary to prevent visible dust from leaving work areas. Frequency of watering will be increased during especially dry or windy periods or in areas with high construction activity. Exposed surfaces include (but are not limited to) soil piles, graded areas, unpaved parking areas, staging areas, and access roads. If water or other dust control measures cannot be implemented to unpaved access roads, vehicle speeds will be limited to 15 miles per hour on such road segments.
- Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Haul trucks transporting soil, sand, or other loose material that will be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

- Disturbed areas should be promptly finished and/or protected and maintained in a manner to control fugitive dust. Mulch, dust palative, soil binders, or other reasonable mitigation measures will be used in inactive areas.

22E.5.1.1.6 *Enhanced Fugitive Dust Control Measures for Land Disturbance*

BDCP proponents will ensure that the following measures will be implemented to control dust during soil disturbance activities.

- Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site.
- Suspend excavation, grading, and/or offending demolition activity during high wind conditions, should the high winds cause fugitive dust to leave the construction site.
- Where appropriate, install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.
- Plant vegetative ground cover (native grass/plant seed) in disturbed areas as soon as reasonable after construction is completed. Water appropriately until vegetation is established.

22E.5.1.1.7 *Measures for Entrained Road Dust*

BDCP proponents will ensure that the following measures will be implemented to control track out.

- Install rattle plates, stabilized construction entrances/exits, wheel washers, or wash off all trucks, vehicles, and equipment leaving the site.
- Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and track out onto public roads.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the District will also be visible to ensure compliance.

22E.5.1.1.8 *Measures for New Concrete Batching Plants*

BDCP proponents will ensure that the following measures will be implemented to the extent feasible to control dust during concrete batching activities.

- Apply water and/or chemical suppressants to reduce fugitive dust emissions from active storage piles and during aggregate and sand delivery, storage, and transfer.
- Use a hood system vented to a fabric filter/baghouse to reduce fugitive dust emissions during cement delivery and hopper and central mix loading.

22E.5.2 Offsite Mitigation

Mitigation measures to avoid construction emissions in excess of air district and federal *de minimis* thresholds are outlined in Chapter 22, *Air Quality and Greenhouse Gases*, of the partially recirculated Draft EIS/EIR. These measures are consistent with NEPA and CEQA mitigation and minimization measures and will be required elements of the project, as they will be included in the project's Mitigation Monitoring and Reporting Program, as required under CEQA. The mitigation measures

required in the partially recirculated Draft EIS/EIR are described below. The BDCP proponents have primary implementation responsibility for the mitigation measures.

Mitigation Measure AQ-1a: Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within the SFNA to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable CEQA Thresholds for Other Pollutants³

DWR will reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP within the SFNA through the creation of offsetting reductions of emissions. The preferred means of undertaking such offsite mitigation shall be through a partnership with the SMAQMD involving the payment of offsite mitigation fees. Criteria pollutants in excess of the federal *de minimis* thresholds shall be reduced to net zero (0) (see Table 22-9). Criteria pollutants not in excess of the *de minimis* thresholds, but above any applicable air pollution control or air quality management district CEQA thresholds⁴ shall be reduced to quantities below the numeric thresholds (see Table 22-8).⁵

DWR will undertake in good faith an effort to enter into a development mitigation contract with SMAQMD in order to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP. The preferred source of emissions reductions for NO_x, PM, and ROG shall be through contributions to SMAQMD's HDLEVIP. The HDLEVIP is designed to reduce NO_x, PM, and ROG from on- and offroad sources. The program is managed and implemented by SMAQMD on behalf of all air districts within the SFNA, including the YSAQMD.

SMAQMD's incentive programs are a means of funding projects and programs capable of achieving emissions reductions. The payment fee is based on the average cost to achieve one ton per day (tpd) of reductions based on the average cost for reductions over the previous year. Onroad reductions averaged (nominally) \$44 million (NO_x only) and off-road reductions averaged \$36 million (NO_x only) over the previous year, thus working out to approximately \$40 million per one tpd of reductions. This rate roughly correlates to the average cost effectiveness of the Carl Moyer Incentive Program.

If DWR is successful in reaching what it regards as a satisfactory agreement with SMAQMD, DWR will enter into mitigation contracts with SMAQMD to reduce NO_x, PM, or ROG (as appropriate) emissions to the required levels. Such reductions may occur within the SMAQMD and/or within another air district within the SFNA. The required levels are:

- For emissions in excess of the federal *de minimis* threshold: **net zero (0)** (see Table 22-9).
- For emissions not in excess of *de minimis* thresholds but above the appropriate SMAQMD standards: **below the appropriate CEQA threshold levels** (see Table 22-8.)

³ In the title of this mitigation measure, the phrase "for other pollutants" is intended to apply to other alternatives, where associated impacts to other pollutants may exceed thresholds other than NO_x.

⁴ For example, NO_x emissions in a certain year may exceed BAAQMD's 54 pound per day CEQA threshold, but not the 100 ton annual *de minimis* threshold. According to Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding the significance of an impact.

⁵ For example, emissions of NO_x generated by Alternative 1A both exceed the federal *de minimis* threshold for the SVAB and the SMAQMD's CEQA threshold. NO_x emissions must therefore be reduced to net zero (0).

Implementation of this mitigation would require DWR to adopt the following specific responsibilities.

- Consult with the SMAQMD in good faith with the intention of entering into a mitigation contract with SMAQMD for the HDLEVIP. For SIP purposes, the necessary reductions must be achieved (contracted and delivered) by the applicable year in question (i.e., emissions generated in year 2016 would need to be reduced offsite in 2016). Funding would need to be received prior to contracting with participants and should allow sufficient time to receive and process applications to ensure offsite reduction projects are funded and implemented prior to commencement of BDCP activities being reduced. This would roughly equate to the equivalent of two years prior to the required mitigation; additional lead time may be necessary depending on the level of offsite emission reductions required for a specific year. In negotiating the terms of the mitigation contract, DWR and SMAQMD should seek clarification and agreement on SMAQMD responsibilities, including the following.
 - Identification of appropriate offsite mitigation fees required for BDCP.
 - Timing required for obtaining necessary offsite emission credits.
 - Processing of mitigation fees paid by DWR.
 - Verification of emissions inventories submitted by DWR.
 - Verification that offsite fees are applied to appropriate mitigation programs within the SFNA.
- Quantify mitigation fees required to satisfy the appropriate reductions. As noted above, the payment fees may vary by year and are sensitive to the number of projects requiring reductions within the SFNA. The schedule in which payments are provided to SMAQMD also influences overall cost. For example, a higher rate on a per-tonnage basis will be required for project elements that need accelerated equipment turn-over to achieve near-term reductions, whereas project elements that are established to contract to achieve far-term reductions will likely pay a lower rate on a per-tonnage basis.
- Develop a compliance program to calculate emissions and collect fees from the construction contractors for payment to SMAQMD. The program will require, as a standard or specification of their construction contracts with DWR, that construction contractors identify construction emissions and their share of required offsite fees, if applicable. Based on the emissions estimates, DWR will collect fees from the individual construction contractors (as applicable) for payment to SMAQMD. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offsite fee. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by SMAQMD.
- Conduct daily and annual emissions monitoring to ensure onsite emissions reductions are achieved and no additional mitigation payments are required. Excess offsite funds can be carried from previous to subsequent years in the event that additional reductions are achieved by onsite mitigation. At the end of the project, if it is determined that excess offset funds remain (outstanding contracts and administration over the final years of the contracts

will be taken into consideration), SMAQMD and DWR shall determine the disposition of final funds (e.g., additional emission reduction projects to offset underperforming contracts, return of funds to DWR, etc.).

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, DWR will coordinate with SMAQMD to ensure the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable CEQA thresholds for other pollutants not in excess of the *de minimis* thresholds but above CEQA thresholds are met.

Mitigation Measure AQ-1b: Develop an Alternative or Complementary Offsite Mitigation Program to Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within the SFNA to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable CEQA Thresholds for Other Pollutants

Should DWR be unable to enter into what they regard as a satisfactory agreement with SMAQMD as contemplated by Mitigation Measure AQ-1a, or should DWR enter into an agreement with SMAQMD but find themselves unable to meet the performance standards set forth in Mitigation Measure AQ-1a, DWR will develop an alternative or complementary offsite mitigation program to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP. The offsite mitigation program will offset criteria pollutant emissions to the required levels identified in Mitigation Measure AQ-1a. Accordingly, the program will ensure that the project does not contribute to or worsen existing air quality violations. Whether this program will address emissions beyond NO_x, PM, or ROG, will turn on whether DWR has achieved sufficient reductions of those pollutants pursuant to Mitigation Measure AQ-1a.

The offsite mitigation program will establish a program to fund emission reduction projects through grants and similar mechanisms. All projects must provide contemporaneous (occur in the same calendar year as the emission increases) and localized (i.e., within the SFNA) emissions benefit to the area of effect. DWR may identify emissions reduction projects through consultation with SMAQMD, other air districts within the SFNA, and ARB, as needed. Potential projects could include, but are not limited to the following.

- Alternative fuel, low-emission school buses, transit buses, and other vehicles.
- Diesel engine retrofits and repowers.
- Locomotive retrofits and repowers.
- Electric vehicle or lawn equipment rebates.
- Electric vehicle charging stations and plug-ins.
- Video-teleconferencing systems for local businesses.
- Telecommuting start-up costs for local businesses.

As part of its alternative or complementary offsite mitigation program, DWR will develop pollutant-specific formulas to monetize, calculate, and achieve emissions reductions in a cost-effective manner. Construction contractors, as a standard specification of their construction contracts with DWR, will identify construction emissions and their share of required offset fees.

DWR will verify the emissions estimates submitted by the construction contractors and calculate the required fees. Construction contractors (as applicable) will be required to surrender required fees to DWR prior to the start of construction. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offset fee. Acceptable options for reducing emissions may include, but are not limited to, the use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by SMAQMD, the ARB, any relevant air pollution control or air quality management district within the SFNA, or by a qualified air quality expert employed by or retained by DWR.

The offsite fee, grant, or other mechanism will be calculated or formulated based on the actual cost of pollutant reductions. No collected offset fees will be used to cover administrative costs; offset fees or other payments are strictly limited to procurement of offsite emission reductions. Fees or other payments collected by DWR will be allocated to emissions reductions projects in a grant-like manner. DWR shall document the fee schedule basis, such as consistency with the ARB's Carl Moyer Program cost-effectiveness limits and capital recovery factors.

DWR will conduct annual reporting to verify and document that emissions reductions projects achieve a 1:1 reduction with construction emissions to ensure claimed offsets meet the required performance standard. All offsite reductions must be quantifiable, verifiable, enforceable, and satisfy the basic criterion of additionality (i.e., the reductions would not happen without the financial support of purchased offset credits). Annual reports will include, at a minimum the following components.

- Total amount of offset fees received.
- Total fees distributed to offsite projects.
- Total fees remaining.
- Projects funded and associated pollutant reductions realized.
- Total emission reductions realized.
- Total emissions reductions remaining to satisfy the requirements of Mitigation Measure AQ-1b.
- Overall cost-effectiveness of the projects funded.

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, DWR will consult with SMAQMD, the ARB, any relevant air pollution control or air quality management district within the SFNA, or a qualified air quality expert employed by or retained by DWR to ensure conformity is met through some other means of achieving the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable CEQA thresholds for other pollutants.

Mitigation Measure AQ-3a: Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within BAAQMD/SFBAAB to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable BAAQMD CEQA Thresholds for Other Pollutants⁶

DWR will reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP within the BAAQMD through the creation of offsetting reductions of emissions occurring within the SFBAAB. The preferred means of undertaking such offsite mitigation shall be through a partnership with the BAAQMD involving the payment of offsite mitigation fees. Criteria pollutants in excess of the federal *de minimis* thresholds shall be reduced to net zero (0) (see Table 22-9). Criteria pollutants not in excess of the *de minimis* thresholds, but above any applicable air pollution control or air quality management district CEQA thresholds⁷ shall be reduced to quantities below the numeric thresholds (see Table 22-8).

DWR will undertake in good faith an effort to enter into a development mitigation contract with BAAQMD in order to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP within the BAAQMD. The preferred source of emissions reductions for NO_x, ROG, and PM shall be through contributions to BAAQMD's Carl Moyer Program and/or other BAAQMD incentive programs (e.g., TFCA).

If DWR is successful in reaching what it regards as a satisfactory agreement with BAAQMD, DWR will enter into mitigation contracts with BAAQMD to reduce NO_x, PM, or ROG (as appropriate) emissions to the required levels. Such reductions may occur within the SFBAAB. The required levels are:

- For emissions in excess of the federal *de minimis* threshold: **net zero (0)** (see Table 22-9).
- For emissions not in excess of *de minimis* thresholds but above the appropriate BAAQMD standards: **below the appropriate CEQA threshold levels** (see Table 22-8).

Implementation of this mitigation would require DWR adopt the following specific responsibilities.

- Consult with the BAAQMD in good faith with the intention of entering into a mitigation contract with BAAQMD for the Carl Moyer Program and/or other BAAQMD emission reduction incentive program. For SIP purposes, the necessary reductions must be achieved (contracted and delivered) by the applicable year in question (i.e., emissions generated in year 2016 would need to be reduced offsite in 2016). Funding would need to be received prior to contracting with participants and should allow sufficient time to receive and process applications to ensure offsite reduction projects are funded and implemented prior to commencement of BDCP activities being reduced. In negotiating the terms of the mitigation contract, DWR and BAAQMD should seek clarification and agreement on BAAQMD responsibilities, including the following.

⁶ In the title of this mitigation measure, the phrase "for other pollutants" is intended to apply to other alternatives, where associated impacts to other pollutants may exceed thresholds other than NO_x.

⁷ For example, NO_x emissions in a certain year may exceed BAAQMD's 54 pound per day CEQA threshold, but not the 100 ton annual *de minimis* threshold. According to Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding the significance of an impact.

- Identification of appropriate offsite mitigation fees required for BDCP.
- Timing required for obtaining necessary offsite emission credits.
- Processing of mitigation fees paid by DWR.
- Verification of emissions inventories submitted by DWR.
- Verification that offsite fees are applied to appropriate mitigation programs within the SFBAAB.
- Quantify mitigation fees required to satisfy the appropriate reductions. Funding for the emission reduction projects will be provided in an amount up to the emission reduction project cost-effectiveness limit set by for the Carl Moyer Program during the year that the emissions from construction are emitted. (The current emissions limit is \$17,720 / weighted ton of criteria pollutants [NO_x + ROG + (20*PM)]). An administrative fee of 5% would be paid by DWR to the BAAQMD to implement the program. The funding would be used to fund projects eligible for funding under the Carl Moyer Program guidelines or other BAAQMD emission reduction incentive program meeting the same cost-effectiveness threshold that are real, surplus, quantifiable, and enforceable.
- Develop a compliance program to calculate emissions and collect fees from the construction contractors for payment to BAAQMD. The program will require, as a standard or specification of their construction contracts with DWR, that construction contractors identify construction emissions and their share of required offsite fees, if applicable. Based on the emissions estimates, DWR will collect fees from the individual construction contractors (as applicable) for payment to BAAQMD. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offsite fee. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by BAAQMD.
- Conduct daily and annual emissions monitoring to ensure onsite emissions reductions are achieved and no additional mitigation payments are required. Excess offsite funds can be carried from previous to subsequent years in the event that additional reductions are achieved by onsite mitigation. At the end of the project, if it is determined that excess offset funds remain (outstanding contracts and administration over the final years of the contracts will be taken into consideration), BAAQMD and DWR shall determine the disposition of final funds (e.g., additional emission reduction projects to offset underperforming contracts, return of funds to DWR, etc.).

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, the DWR will coordinate with BAAQMD to ensure the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable BAAQMD CEQA thresholds for other pollutants not in excess of the *de minimis* thresholds but above BAAQMD CEQA thresholds are met.

Mitigation Measure AQ-3b: Develop an Alternative or Complementary Offsite Mitigation Program to Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within the BAAQMD/SFBAAB to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable BAAQMD CEQA Thresholds for Other Pollutants

Should DWR be unable to enter into what they regard as a satisfactory agreement with BAAQMD as contemplated by Mitigation Measure AQ-3a, or should DWR enter into an agreement with BAAQMD but find themselves unable to meet the performance standards set forth in Mitigation Measure AQ-3a, DWR will develop an alternative or complementary offsite mitigation program to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP. The offsite mitigation program will offset criteria pollutant emissions to the required levels identified in Mitigation Measure AQ-3a. Accordingly, the program will ensure that the project does not contribute to or worsen existing air quality violations. Whether this program will address emissions beyond NO_x, PM, or ROG, will turn on whether DWR has achieved sufficient reductions of those pollutants pursuant to Mitigation Measure AQ-3a.

The offsite mitigation program will establish a program to fund emission reduction projects through grants and similar mechanisms. All projects must provide contemporaneous (occur in the same calendar year as the emission increases) and localized (i.e., within the SFBAAB) emissions benefit to the area of effect. DWR may identify emissions reduction projects through consultation with BAAQMD and ARB, as needed. Potential projects could include, but are not limited to the following.

- Alternative fuel, low-emission school buses, transit buses, and other vehicles.
- Diesel engine retrofits and repowers.
- Locomotive retrofits and repowers.
- Electric vehicle or lawn equipment rebates.
- Electric vehicle charging stations and plug-ins.
- Video-teleconferencing systems for local businesses.
- Telecommuting start-up costs for local businesses.

As part of its alternative or complementary offsite mitigation program, DWR will develop pollutant-specific formulas to monetize, calculate, and achieve emissions reductions in a cost-effective manner. Construction contractors, as a standard specification of their construction contracts with DWR, will identify construction emissions and their share of required offset fees. DWR will verify the emissions estimates submitted by the construction contractors and calculate the required fees. Construction contractors (as applicable) will be required to surrender required fees to DWR prior to the start of construction. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offset fee. Acceptable options for reducing emissions may include, but are not limited to, the use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by BAAQMD, the ARB, or by a qualified air quality expert employed by or retained by DWR.

The offsite fee, grant, or other mechanism will be calculated or formulated based on the actual cost of pollutant reductions. No collected offset fees will be used to cover administrative costs; offset fees or other payments are strictly limited to procurement of offsite emission reductions. Fees or other payments collected by DWR will be allocated to emissions reductions projects in a grant-like manner. DWR shall document the fee schedule basis, such as consistency with the ARB's Carl Moyer Program cost-effectiveness limits and capital recovery factors.

DWR will conduct annual reporting to verify and document that emissions reductions projects achieve a 1:1 reduction with construction emissions to ensure claimed offsets meet the required performance standard. All offsite reductions must be quantifiable, verifiable, enforceable, and satisfy the basic criterion of additionality (i.e., the reductions would not happen without the financial support of purchased offset credits). Annual reports will include, at a minimum the following components.

- Total amount of offset fees received.
- Total fees distributed to offsite projects.
- Total fees remaining.
- Projects funded and associated pollutant reductions realized.
- Total emission reductions realized.
- Total emissions reductions remaining to satisfy the requirements of Mitigation Measure AQ-3b.
- Overall cost-effectiveness of the projects funded.

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, DWR will consult with BAAQMD, the ARB, or a qualified air quality expert employed by or retained by DWR to ensure conformity is met through some other means of achieving the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable BAAQMD CEQA thresholds for other pollutants.

Mitigation Measure AQ-4a: Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within SJVAPCD/SJVAB to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable SJVAPCD CEQA Thresholds for Other Pollutants⁸

DWR will reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP within the SJVAPCD through the creation of offsetting reductions of emissions occurring within the SJVAB. The preferred means of undertaking such offsite mitigation shall be through a partnership with the SJVAPCD involving the payment of offsite mitigation fees. Criteria pollutants in excess of the federal *de minimis* thresholds shall be reduced to net zero (0) (see Table 22-9). Criteria pollutants not in excess of the *de minimis* thresholds, but above any applicable air pollution control or air quality

⁸ In the title of this mitigation measure, the phrase "for other pollutants" is intended to apply to other alternatives, where associated impacts to other pollutants may exceed thresholds other than NO_x.

management district CEQA thresholds⁹ shall be reduced to quantities below the numeric thresholds (see Table 22-8).¹⁰

DWR will undertake in good faith an effort to enter into a development mitigation contract with SJVAPCD in order to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP within the SJVAPCD. The preferred source of emissions reductions for NO_x, PM, and ROG shall be through contributions to SJVAPCD's VERA. The VERA is implemented through the District Incentive Programs and is a measure to reduce project impacts under CEQA. The current VERA payment fee for construction emissions is \$9,350 per ton of NO_x and \$9,011 per ton of PM₁₀. This is an estimated cost and may change in the future (e.g., future year payment fees for NO_x could be in excess of the current price of \$9,350) and are sensitive to the number and type of projects requiring emission reductions within the same air basin (Siong pers. comm. 2012).

If DWR is successful in reaching what it regards as a satisfactory agreement with SJVAPCD, DWR will enter into mitigation contracts with SJVAPCD to reduce NO_x, PM, or ROG (as appropriate) emissions to the required levels. Such reductions must occur within the SJVAB. required levels are:

- For emissions in excess of the federal *de minimis* threshold: **net zero (0)**.
- For emissions not in excess of *de minimis* thresholds but above the SJVAPCD's standards: **below the appropriate CEQA threshold levels**.

Implementation of this measure would require DWR to adopt the following specific responsibilities.

- Consult with the SJVAPCD in good faith with the intention of entering into a mitigation contract with SJVAPCD for the VERA. For SIP purposes, the necessary reductions must be achieved (contracted and delivered) by the applicable year in question (i.e., emissions generated in year 2016 would need to be reduced offsite in 2016). Funding would need to be received prior to contracting with participants and should allow sufficient time to receive and process applications to ensure offsite reduction projects are funded and implemented prior to commencement of BDCP activities being reduced. This would roughly equate to the equivalent of two months (2) prior to groundbreaking; additional lead time may be necessary depending on the level of offsite emission reductions required for a specific year. In negotiating the terms of the mitigation contract, DWR and SJVAPCD should seek clarification and agreement on SJVAPCD responsibilities, including the following.
 - Identification of appropriate offsite mitigation fees required for BDCP.
 - Processing of mitigation fees paid by DWR.
 - Verification of emissions inventories submitted by DWR

⁹ For example, PM₁₀ emissions in a certain year may exceed SJVAPCD's 15 ton annual CEQA threshold, but not the 100 ton annual *de minimis* threshold. According to Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding the significance of an impact.

¹⁰ For example, emissions of NO_x generated by Alternative 1A both exceed the federal *de minimis* threshold for the SJVAB and the SJVAPCD's CEQA threshold. NO_x emissions must therefore be reduced to net zero (0).

- Verification that offsite fees are applied to appropriate mitigation programs within the SJVAB.
- Quantify mitigation fees required to satisfy the appropriate reductions. An administrative fee of 4% would be paid by DWR to the SJVAPCD to implement the program. As noted above, the payment fees may vary by year and are sensitive to the number of projects requiring reductions within the SJVAB.
- Develop a compliance program to calculate emissions and collect fees from the construction contractors for payment to SJVAPCD. The program will require, as a standard or specification of their construction contracts with DWR, that construction contractors identify construction emissions and their share of required offsite fees, if applicable. Based on the emissions estimates, DWR will collect fees from the individual construction contractors (as applicable) for payment to SJVAPCD. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offsite fee. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by SJVAPCD.
- Conduct daily and annual emissions monitoring to ensure onsite emissions reductions are achieved and no additional mitigation payments are required. Excess offsite funds can be carried from previous to subsequent years in the event that additional reductions are achieved by onsite mitigation. At the end of the project, if it is determined that excess offset funds remain (outstanding contracts and administration over the final years of the contracts will be taken into consideration), SJVAPCD and DWR shall determine the disposition of final funds (e.g., additional emission reduction projects to offset underperforming contracts, return of funds to DWR, etc.).

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, DWR will coordinate with SJVAPCD to ensure the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable SJVAPCD CEQA thresholds for other pollutants not in excess of the *de minimis* thresholds but above SJVAPCD CEQA thresholds are met.

Mitigation Measure AQ-4b: Develop an Alternative or Complementary Offsite Mitigation Program to Mitigate and Offset Construction-Generated Criteria Pollutant Emissions within the SJVAPCD/SJVAB to Net Zero (0) for Emissions in Excess of General Conformity *De Minimis* Thresholds (Where Applicable) and to Quantities below Applicable SJVAPCD CEQA Thresholds for Other Pollutants

Should DWR be unable to enter into what they regard as a satisfactory agreement with SJVAPCD as contemplated by Mitigation Measure AQ-4a, or should DWR enter into an agreement with SJVAPCD but find themselves unable to meet the performance standards set forth in Mitigation Measure AQ-4a, DWR will develop an alternative or complementary offsite mitigation program to reduce criteria pollutant emissions generated by the construction of the water conveyance facilities associated with BDCP. The offsite mitigation program will offset criteria pollutant emissions to the required levels identified in Mitigation Measure AQ-4a. Accordingly, the

program will ensure that the project does not contribute to or worsen existing air quality violations. Whether this program will address emissions beyond NO_x, PM, or ROG, will turn on whether DWR has achieved sufficient reductions of those pollutants pursuant to Mitigation Measure AQ-4a.

The offsite mitigation program will establish a program to fund emission reduction projects through grants and similar mechanisms. All projects must provide contemporaneous (occur in the same calendar year as the emission increases) and localized (i.e., within the SJVAB) emissions benefit to the area of effect. DWR may identify emissions reduction projects through consultation with SJVAPCD and ARB, as needed. Potential projects could include, but are not limited to the following.

- Alternative fuel, low-emission school buses, transit buses, and other vehicles.
- Diesel engine retrofits and repowers.
- Locomotive retrofits and repowers.
- Electric vehicle or lawn equipment rebates.
- Electric vehicle charging stations and plug-ins.
- Video-teleconferencing systems for local businesses.
- Telecommuting start-up costs for local businesses.

As part of its alternative or complementary offsite mitigation program, DWR will develop pollutant-specific formulas to monetize, calculate, and achieve emissions reductions in a cost-effective manner. Construction contractors, as a standard specification of their construction contracts with DWR, will identify construction emissions and their share of required offset fees. DWR will verify the emissions estimates submitted by the construction contractors and calculate the required fees. Construction contractors (as applicable) will be required to surrender required fees to DWR prior to the start of construction. Construction contractors will have the discretion to reduce their construction emissions to the lowest possible level through additional onsite mitigation, as the greater the emissions reductions that can be achieved by onsite mitigation, the lower the required offset fee. Acceptable options for reducing emissions may include, but are not limited to, the use of late-model engines, low-emission diesel products, additional electrification or alternative fuels, engine-retrofit technology, and/or after-treatment products. All control strategies must be verified by SJVAPCD, the ARB, or by a qualified air quality expert employed by or retained by DWR.

The offsite fee, grant, or other mechanism will be calculated or formulated based on the actual cost of pollutant reductions. No collected offset fees will be used to cover administrative costs; offset fees or other payments are strictly limited to procurement of offsite emission reductions. Fees or other payments collected by DWR will be allocated to emissions reductions projects in a grant-like manner. DWR shall document the fee schedule basis, such as consistency with the ARB's Carl Moyer Program cost-effectiveness limits and capital recovery factors.

DWR will conduct annual reporting to verify and document that emissions reductions projects achieve a 1:1 reduction with construction emissions to ensure claimed offsets meet the required performance standard. All offsite reductions must be quantifiable, verifiable, enforceable, and satisfy the basic criterion of additionality (i.e., the reductions would not happen without the

financial support of purchased offset credits). Annual reports will include, at a minimum the following components.

- Total amount of offset fees received.
- Total fees distributed to offsite projects.
- Total fees remaining.
- Projects funded and associated pollutant reductions realized.
- Total emission reductions realized.
- Total emissions reductions remaining to satisfy the requirements of Mitigation Measure AQ-4b.
- Overall cost-effectiveness of the projects funded.

If a sufficient number of emissions reduction projects are not identified to meet the required performance standard, DWR will consult with SJVAPCD, the ARB, or a qualified air quality expert employed by or retained by DWR to ensure conformity is met through some other means of achieving the performance standards of achieving net zero (0) for emissions in excess of General Conformity *de minimis* thresholds (where applicable) and of achieving quantities below applicable SJVAPCD CEQA thresholds for other pollutants.

22E.6 Regulatory Procedures

The general conformity regulations establish certain procedural requirements that must be followed when preparing a general conformity evaluation. The major applicable procedural issues associated with the general conformity demonstration and a description of how these requirements are met are presented in this section. As previously indicated, the partially recirculated Draft EIS/EIR presents the general conformity determination for public and agency review. The final general conformity determination will be published concurrent with the ROD for the Federal action pursuant to 40 CFR §93.156.

22E.6.1 Use of Latest Planning Assumptions

The general conformity regulations require that the analysis use the latest planning assumptions based on data (e.g., population, employment, travel, and congestion) made available by the area's Metropolitan Planning Organizations (MPOs) (40 CFR §93.159[a]).

As the analysis of emissions resulting from construction and O&M activities would not require the use of population, employment, travel, and congestion data, this section is not applicable to the project.

22E.6.2 Use of Latest Emissions Estimation Techniques

The general conformity regulations require the use of the latest and most accurate emission estimation techniques available, unless such techniques are inappropriate (40 CFR §93.159[b]).

Per guidance from the Plan Area air districts, construction and O&M emissions were estimated using the most recent modeling software, including CalEEMod (version 2013.2.2), OFFROAD2007,

EMFAC2014, and the Federal Aviation Administration's (FAA) Emissions and Dispersion Modeling System (EDMS), version 5.1.4. Refer to Appendix 22A, *Air Quality Analysis Methodology*, for detailed information on the emissions estimation techniques.

22E.6.3 Major Construction Phase Activities

Project-specific data, including construction equipment lists and the construction schedule, were used to forecast construction emissions associated with the project using construction activity data provided by DWR. Calculations were performed for each year of construction (2016-2029). O&M calculations were based on detailed equipment and employee forecasts prepared by DWR.

22E.6.4 Emissions Scenarios

The general conformity regulations require that the analysis reflect certain emission scenarios (40 CFR §93.159[d]). Specifically, these scenarios generally include the evaluation of the direct and indirect emissions from a proposed project for the following years.

1. The year mandated in the CAA for attainment and for maintenance areas, the farthest year for which emissions are projected in the approved maintenance plan.
5. The year during which the total of direct and indirect emissions for the Federal action are projected to be the greatest on an annual basis.
6. Any year for which the applicable SIP specifies an emissions budget.

The analysis of construction activities evaluates the construction period of 2016 to 2029, with maximum direct and indirect emissions expected between 2022 and 2026 (see Table 22E-11 below). The O&M analysis considers emissions under two time horizons (ELT and LLT) to capture changes in vehicle technologies and engine emission factors.

22E.7 Applicability Analysis

The general conformity rule applies to all federal actions located in nonattainment and maintenance areas that are not exempt from general conformity (are either covered by Transportation Conformity or listed in the rule), are not covered by a presumed-to-conform approved list¹¹, or do not have clearly *de minimis* emissions. The first step in a general conformity evaluation is to determine whether the project is located in a Federal nonattainment or a maintenance area.

22E.7.1 Attainment Status of the Plan Area

As indicated in Table 22E-8 and Figures 22E-1 through 22E-4, equipment and material deliveries would be located along haul routes that traverse areas currently designated maintenance for the federal CO standard and PM₁₀ standards. The entire project area, including all haul routes and the water conveyance facility, is designated a nonattainment area for the federal ozone and PM_{2.5} standards. Consequently, to fulfill general conformity requirements, an analysis must be undertaken

¹¹ Category of activities designated by a federal agency as having emissions below *de minimis* levels or otherwise do not interfere with the applicable SIP or the attainment and maintenance of the national ambient air quality standard.

to identify whether the proposed project's emissions of ROG and NO_x (ozone/PM precursors), CO, PM₁₀, PM_{2.5}, and SO₂ (PM_{2.5} precursor) located in nonattainment and maintenance areas are below the appropriate general conformity *de minimis* levels indicated in Table 22E-7.

22E.7.2 Exemptions from General Conformity Requirements

As previously indicated, the general conformity rule applies to all federal actions located in nonattainment and maintenance areas that are not exempt from general conformity (are either covered by Transportation Conformity or listed in the rule), are not covered by a presumed-to-conform approved list, or do not have clearly *de minimis* emissions. In addition, the general conformity rule applies only to direct and indirect emissions associated with the portions of any federal action that are subject to New Source Review for which a federal permitting agency has directly caused or initiated, has continued program responsibility for, or can practically control (i.e., do not include stationary industrial sources requiring air quality permits from local air pollution control agencies). None of these exemptions from general conformity apply to the proposed project.

22E.7.3 Applicability for Federal Action

If it is determined a project is not exempt from general conformity, the applicability of the general conformity requirements to the federal action is evaluated by comparing total direct and indirect emissions for each calendar year of to the appropriate general conformity *de minimis* thresholds indicated in Table 22E-7.

In the event that total direct and indirect emissions of a pollutant attributable to the Federal action are below the *de minimis* thresholds for a pollutant, that pollutant is excluded from general conformity requirements and no further analysis is required, as it is assumed these pollutants would conform to the SIP. Those pollutants that could not be excluded from applicability must undergo a general conformity evaluation.

If the general conformity evaluation indicates that total direct and indirect emissions of a pollutant attributable to the Federal action are in excess of any of the general conformity *de minimis* thresholds, the applicant must perform a conformity determination. A conformity determination is made by satisfying any of the following requirements.

- Showing that the emission increases caused by the Federal action are included in the SIP.
- Demonstrating that the State agrees to include the emission increases in the SIP.
- Offsetting the action's emissions in the same or nearby area.
- Mitigating to reduce the emission increase.
- Utilizing a combination of the above strategies.

22E.7.4 *de minimis* Emissions Rates

General conformity *de minimis* thresholds applicable to the project are summarized in Table 22E-7.

22E.8 Construction Activities Considered

The partially recirculated Draft EIS/EIR estimates construction-related emissions for 16 alternatives currently being considered for the BDCP. However, this conformity determination only includes an analysis of Alternative 4/4A because it has been selected as the APA, as discussed in Section 22E.1.2 above. For additional information on the BDCP Alternatives, please refer to Chapter 3, *Description of Alternatives*, and Chapter 22, *Air Quality and Greenhouse Gases*.

Construction of Alternative 4/4A would generate criteria pollutant emissions that would result in short-term impacts on ambient air quality in the study. Emissions would originate from off-road equipment exhaust, marine vessel exhaust, tunneling locomotive exhaust, employee and haul truck vehicle exhaust, helicopter exhaust, site grading and earth movement, paving, and concrete batching. Construction-related emissions vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

Emissions for major construction activities were calculated based on information provided by DWR and standard and accepted software tools, techniques, and emission factors, as summarized below. A full list of assumptions used to quantify criteria pollutant emissions can be found in Appendices 22A, *Air Quality Analysis Methodology*, and 22B, *Air Quality Assumptions*.

- **Off-Road Equipment:** Emission factors for diesel-powered off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2013.2.2) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (ENVIRON 2013). Default equipment emission factors for gasoline-powered equipment were obtained from the ARB's OFFROAD2011 model. Criteria pollutant and GHG emissions from off-road equipment were estimated by multiplying the CalEEMod and OFFROAD emission factors by the equipment inventory provided by DWR.
- **Marine Vessels:** Criteria pollutant emission factors for marine vessels were quantified using the ARB's (2012) *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California*. Calculated emission factors were multiplied by the marine vessel activity data provided by DWR.
- **Tunneling Locomotives:** Emissions from diesel-powered locomotives were quantified using the ARB's (2010) off-road diesel engine emission standards and a locomotive inventory provided by DWR. All locomotives were assumed to utilize a 150 horsepower engine.
- **Helicopters:** Helicopters would be used during line stringing activities for the 115/230 kV transmission lines. Two light-duty helicopters were assumed to operate four hours a day to install new poles and lines. Helicopter emissions were estimated using emission factors from FAA's EDMS, version 5.1.4.
- **Onroad Vehicles:** Onroad vehicles (e.g., pick-up trucks, flatbed trucks) would be required for material and equipment hauling, tunnel segment hauling, onsite crew and material movement, employee commuting, and as-needed supply and equipment pick-up. Exhaust emissions from onroad vehicles were estimated using the EMFAC2014 emissions model and activity data provided by DWR. Fugitive re-entrained road dust emissions associated with the vehicle trips were estimated using EPA's (2006a; 2011) *Compilation of Air Pollutant Emission Factors* (AP-42), Sections 13.2.1 and 13.2.2.

- **Site Disturbance and Paving:** Fugitive emissions from earth movement (i.e., site grading, bulldozing, and truck loading) and paving were quantified using emission factors from CalEEMod and EPA's (1998) AP-42, Section 11.9. Data on the total graded and paved acreage and quantity of borrow, excavated, and dredged material for each construction phase, as well as the estimated maximum acreage and material that would be disturbed and paved in any one day, were provided by DWR.
- **Concrete Batching:** Fugitive dust emissions from concrete batching were estimated using concrete data from DWR and emission factors from EPA's AP-42 (2006b) Section 11.12, and SMAQMD's (2011) Concrete Batching Operations Policy Manual.

Table 22E-9 summarizes the emission sources or project features that would occur in each air basin. Several features cross multiple air districts or air basins. The proportion of activity within each air district and basin was based on the number of miles or acres constructed within each air district and basin. Please refer to Appendix 22B, *Air Quality Assumptions*, for additional information.

Table 22E-9. Project Features Located in the YSAQMD, SMAQMD, BAAQMD, and SJVAPCD (Alternative 4/4A)

Project Feature	YSAQMD	SMAQMD	BAAQMD	SJVAPCD
Geotechnical Investigations		X	X	X
Temporary Utilities		X		X
Equipment and Material Delivery	X	X	X	X
Tunnel Reach 7/Combined Pumping Plant			X	
Tunnel Reaches 1, 2, 3		X		
Tunnel Reach 4		X		
Tunnel Reach 6				X
Tunnel Reach 5				X
Intakes		X		
Clifton Court Forebay			X	
Intermediate Forebay		X		
Permeant Utilities			X	X
SMAQMD = Sacramento Metropolitan Air Quality Management District.				
YSAQMD = Yolo-Solano Air Quality Management District.				
BAAQMD = Bay Area Air Quality Management District.				

Construction would occur in multiple phases (e.g., mobilization, land clearing). A detailed construction schedule for Alternative 4/4A was provided by DWR. Geotechnical work would begin in 2016, following by temporary utilities in 2017. Construction of the physical water conveyance facility would begin in 2018. Table 22E-10 outlines the expected construction schedule for each major feature. Refer to Table 22B-1 in Appendix B, *Air Quality Assumptions*, for a detailed schedule by construction phase.

Table 22E-10. General Construction Schedule (Alternative 4/4A)

Project Feature	Construction Time Frame	
	Start	Days
Geotechnical Investigations	1/1/2016	823
Temporary Utilities	8/1/2017	- ^a
Equipment and Material Delivery	8/1/2017	4,362
Tunnel Reach 7/Combined Pumping Plant	1/2/2018	2,878
Tunnel Reaches 1, 2, 3	7/3/2018	2,164
Tunnel Reach 4	11/6/2018	2,462
Tunnel Reach 6	3/5/2019	2,141
Tunnel Reach 5	3/3/2020	1,503
Intakes	11/1/2020	2,285
Clifton Court Forebay	12/29/2023	1,561
Intermediate Forebay	7/1/2024	1,300
Permeant Utilities	1/1/2027	128

^a Number of days varies between 325 to 520, depending on the location of the temporary line.

22E.9 O&M Activities Considered

Operations and maintenance include both routine activities and yearly maintenance. Routine activities would occur on a daily basis throughout the year, whereas yearly maintenance would occur annually or every five years. Emissions associated with vehicle traffic and maintenance equipment were estimated using the EMFAC2014 and CalEEMod models, respectively. Employee and equipment data were provided by DWR. Emissions were quantified for both ELT and LTT. Detailed assumptions used in the emissions modeling are provided in Appendix 22A, *Air Quality Analysis Methodology*.

22E.10 Estimated Emissions Rates and Comparison to *de Minimis* Thresholds

Annual criteria pollutant emissions resulting from construction and O&M (ELT and LTT time periods) of Alternative 4/4A in nonattainment and maintenance areas are presented in Table 22E-11. Emissions estimates include implementation of onsite environmental commitments (see Section 22E.1.5.1). Violations of the federal *de minimis* thresholds are shown in underlined text.

Table 22E-11. Criteria Pollutant Emissions from Construction and O&M of Alternative 4/4A in Nonattainment and Maintenance Areas of the SVAB, SJVAB, and SFBAAB (tons/year)

Year	Sacramento Valley Air Basin					
	ROG	NO _x ^a	CO ^b	PM10 ^c	PM2.5	SO ₂
2016	<1	3	<1	<1	<1	<1
2017	<1	4	<1	1	1	<1
2018	1	9	1	9	3	<1
2019	5	<u>45</u>	1	21	5	<1
2020	6	<u>64</u>	1	30	5	<1
2021	10	<u>87</u>	3	40	7	<1
2022	11	<u>82</u>	3	40	7	1
2023	10	<u>73</u>	2	38	6	<1
2024	11	<u>83</u>	3	36	7	1
2025	14	<u>106^d</u>	6	41	8	1
2026	13	<u>90</u>	1	34	6	1
2027	11	<u>79</u>	<1	33	6	<1
2028	3	20	<1	19	3	<1
2029	3	19	<1	13	2	<1
ELT	0.13	0.80	1.65	0.27	0.08	<0.01
LLT	0.11	0.68	1.58	0.26	0.07	<0.01
<i>De Minimis</i>	<i>25</i>	<i>25</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Year	San Joaquin Valley Air Basin					
	ROG	NO _x ^a	CO ^b	PM10	PM2.5	SO ₂
2016	<1	4	0	<1	<1	<1
2017	1	5	0	1	1	<1
2018	3	<u>20</u>	0	9	3	<1
2019	6	<u>42</u>	0	27	5	<1
2020	<u>12</u>	<u>95</u>	4	48	7	2
2021	<u>14</u>	<u>104</u>	7	47	7	3
2022	<u>16</u>	<u>112</u>	13	47	8	6
2023	<u>14</u>	<u>92</u>	13	35	6	6
2024	<u>12</u>	<u>74</u>	13	24	5	6
2025	<u>10</u>	<u>62</u>	8	19	4	4
2026	6	<u>39</u>	0	15	2	<1
2027	4	<u>27</u>	0	14	2	<1
2028	2	<u>10</u>	0	7	1	<1
2029	0	0	0	0	0	0
ELT	0.01	0.08	0.14	0.02	0.01	0.00
LLT	0.01	0.07	0.13	0.02	0.01	0.00
<i>De Minimis</i>	<i>10</i>	<i>10</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Year	San Francisco Bay Area Air Basin					
	ROG	NO _x ^a	CO ^b	PM10 ^e	PM2.5	SO ₂
2016	<1	1	<1	-	<1	<1
2017	<1	1	<1	-	<1	<1
2018	3	20	1	-	2	<1
2019	2	19	0	-	2	<1
2020	5	46	17	-	5	7
2021	8	72	31	-	7	12
2022	10	98	49	-	9	19
2023	10	99	49	-	9	19
2024	15	<u>129</u>	49	-	11	20
2025	19	<u>148</u>	32	-	11	13
2026	10	67	2	-	6	1
2027	9	58	2	-	6	1
2028	6	40	1	-	4	1
2029	<1	1	<1	-	1	<1
ELT	0.19	1.15	2.42	-	0.11	0.01
LLT	0.16	0.97	2.33	-	0.10	0.01
<i>De Minimis</i>	<i>100</i>	<i>100</i>	<i>100</i>	-	<i>100</i>	<i>100</i>

Year	Sacramento Valley Air Basin					
	ROG	NO _x ^a	CO ^b	PM10 ^c	PM2.5	SO ₂
Notes						
^a NO _x emissions in excess of 100 tons per year within federally designated PM10 and PM2.5 nonattainment or maintenance areas trigger a secondary PM10 and PM2.5 precursor threshold. NO _x emissions in excess of this secondary threshold could conflict with the applicable PM10 and PM2.5 SIPs. Accordingly, NO _x offsets pursued for the purposes of general conformity must occur within the federally-designated PM2.5 nonattainment and PM10 maintenance areas, as applicable.						
^b The proposed water conveyance facility is located within a federally designated CO attainment area. Accordingly, CO emissions generated by construction of CM1 are not subject to the General Conformity Rule and are excluded from the emissions summary and general conformity analysis (40 CFR Part 51 and 93, Section III.A). Emissions presented in the table are limited those generated by haul trucks, which would occur in federally designated CO maintenance area.						
^c There are no federally designated PM10 maintenance areas in Yolo County. Accordingly, PM10 emissions generated by construction of CM1 in Yolo County are not subject to the General Conformity Rule and are excluded from the emissions summary and general conformity analysis for the SVAB (40 CFR Part 51 and 93, Section III.A). Emissions presented in the table are limited those generated within Sacramento County.						
^d 96.2 tons would be generated in SMAQMD and 9.7 tons would be generated in YSAQMD.						
^e There are no federally designated PM10 nonattainment or maintenance areas in the SFBAAB. Accordingly, PM10 emissions generated by construction of CM1 are not subject to the General Conformity Rule and are excluded from the emissions summary and general conformity analysis (40 CFR Part 51 and 93, Section III.A).						

22E.11 Regional Effects

As shown in Table 22E-11, implementation of Alternative 4/4A would exceed the following federal *de minimis* thresholds.

- SVAB—NO_x: 2019-2027
- SJVAB—NO_x: 2018-2028 and ROG: 2020-2025
- SFBAAB—NO_x: 2024-2025

ROG and NO_x are precursors to ozone, for which the SVAB, SJVAB, and SFBAAB are in nonattainment for the NAAQS. Since project emissions exceed the federal *de minimis* threshold for ROG (SJVAB only) and NO_x, a general conformity determination must be made to demonstrate that total direct and indirect emissions of ROG (SJVAB only) and NO_x would conform to the appropriate SVAB, SJVAB, and SFBAAB SIP for each year of construction in which the *de minimis* thresholds are exceeded.

NO_x is also a precursor to PM and can contribute to PM formation. As discussed above, Sacramento County and the SJVAB are currently designated maintenance for the PM10 NAAQS, whereas the SJVAB, SFBAAB, and portions of the SVAB are designated nonattainment for the PM2.5 NAAQS. NO_x emissions in excess of 100 tons per year in Sacramento County and SJVAB trigger a secondary PM10 precursor threshold, whereas NO_x emissions in excess of 100 tons per year in the SVAB, SJVAB, or SFBAAB trigger a secondary PM2.5 precursor threshold. Since NO_x emissions can contribute to PM formation, NO_x emissions in excess of these secondary precursor thresholds could conflict with the applicable PM10 and PM2.5 SIPs.

As shown in Table 22E-11, NO_x emissions generated by construction activities in SVAB would exceed 100 tons in 2025. However, only 96 of these tons would be generated in Sacramento County. Accordingly, the project does not trigger the secondary PM10 precursor threshold in Sacramento County, but would trigger the secondary PM2.5 precursor threshold in 2025. The PM2.5 precursor threshold would also be exceeded in the SFBAAB in 2024 and 2025. The PM10 and PM2.5 precursor

thresholds would be exceeded in the SJVAB in 2021 and 2022. Accordingly, secondary PM_{2.5} and PM₁₀ (SJVAB only) effects must be considered in the general conformity determination.

No additional analyses are required for the other pollutants during construction or O&M activities as emission would not exceed the federal *de minimis* thresholds.

22E.12 General Conformity Evaluation

As disused in Section 22E.1.1.2, *General Conformity Requirements*, a positive general conformity determination can be made through one of five criteria (project inclusion in the SIP, revision to the SIP, offsets, additional mitigation, and/or a combination of strategies). This section summarizes the findings that were used to make the determination for the BDCP.

22E.12.1 Conformity Requirements for the Applicant-Preferred Alternative

As described in Section 22E.1.2, Alternative 4/4A has been selected as APA. As shown in Table 22E-11, construction-related NO_x emissions generated by Alternative 4/4A in the SVAB and SFBAAB exceed the federal *de minimis* threshold between 2019 and 2027 and 2024 and 2025, respectively. Construction-related ROG and NO_x emissions in the SJVAB would exceed the federal *de minimis* threshold between 2020 and 2025 and 2018 and 2028, respectively. The highest annual NO_x emissions in the SVAB (106 tons) and SFBAAB (148 tons) occur in 2025. The highest annual ROG and NO_x emissions in the SJVAB occur in 2022 and are 16 ton and 112 tons, respectively. Because NO_x emissions exceed the federal *de minimis* threshold in the SVAB and SFBAAB and ROG and NO_x emissions exceed the federal *de minimis* threshold in the SJVAB, a conformity determination is required for construction-related ROG (SJVAB only) and NO_x emissions generated by Alternative 4/4A for all years in excess of the federal *de minimis* thresholds (See Table 22E-11). Since NO_x emissions exceed 100 tons per year in federally designated PM_{2.5} nonattainment areas and a PM₁₀ maintenance area (SJVAB), and because NO_x is a precursor to PM, secondary PM_{2.5} and PM₁₀ (SJVAB only) effects must also be considered in the general conformity determination for those years in which NO_x emission exceed 100 tons.

No additional analyses are required for the other pollutants during construction or O&M activities as emission would not exceed the federal *de minimis* thresholds.

22E.12.2 Compliance with Conformity Requirements

The Federal lead agencies herein demonstrate that construction-related ROG (SJVAB only) and NO_x emissions generated by the APA would not result in a net increase in regional ROG (SJVAB only) or NO_x emissions. This will be achieved by offsetting ROG (SJVAB only) and NO_x emissions generated during all years in excess of the federal *de minimis* thresholds to net zero. Purchasing offsets is consistent with the general conformity rule, which states that a positive conformity determination may be reached if project-related emissions are offset to net zero for all years in which pollutants exceed applicable *de minimis* thresholds (refer to Section 22E.1.1.2).

Within the SVAB, project emissions would not result in a net increase in regional NO_x emissions, as construction-related NO_x would be fully offset to zero through implementation of Mitigation Measures AQ-1a and 1b, which require additional onsite mitigation and/or offsets (see Section

2E.1.5.2). NO_x offsets for 2025 must occur within the federally designated PM_{2.5} nonattainment area of the SJVAB. The nonattainment boundary for PM_{2.5} includes all of Sacramento County and portions of Yolo, El Dorado, Solano, and Placer counties. Mitigation Measures AQ-1a and 1b will ensure the requirements of the mitigation and offset program are implemented and conformity requirements for NO_x are met in the SJVAB.

Within SJVAB, project emissions would not result in an increase in regional ROG or NO_x emissions, as construction-related ROG and NO_x emissions would be fully offset to zero through implementation of Mitigation Measures AQ-4a and AQ-4b, which require additional onsite mitigation and/or offsets (see Section 2E.1.5.2). NO_x offsets for 2021 and 2022 must occur within the federally designated PM₁₀ maintenance and PM_{2.5} nonattainment areas of the SJVAB, which are consistent with the nonattainment boundary for ozone. Mitigation Measures AQ-4a and AQ-4b will ensure the requirements of the mitigation and offset program are implemented and conformity requirements for ROG and NO_x are met in the SJVAB.

Within the SFBAAB, project emissions would not result in a net increase in regional NO_x emissions, as construction-related NO_x would be fully offset to zero through implementation of Mitigation Measures AQ-3a and 3b, which require additional onsite mitigation and/or offsets (see Section 2E.1.5.2). NO_x offsets must occur within the federally designated PM_{2.5} nonattainment area of the SFBAAB, which is consistent with the nonattainment boundary for ozone. Mitigation Measures AQ-3a and 3b will ensure the requirements of the mitigation and offset program are implemented and conformity requirements for NO_x are met in the SFBAAB.

The BDCP proponents have undergone extensive coordination with BAAQMD and SJVAPCD to confirm the feasibility of Mitigation Measures 3a, 3b, 4a, and 4b. Based on the performance of current incentive programs and reasonably foreseeable future growth, the Plan Area air districts have confirmed that sufficient emissions reduction credits would be available to offset ROG (SJVAB only) and NO_x emissions generated by Alternative 4/4A for all years in excess of the federal *de minimis* thresholds (see Table 22E-11). Please refer to Attachment 22E-1 for copies of the air district consultation and confirmation letters. Consultation with SMAQMD and YSAQMD is still ongoing.

22E.13 Reporting

The Federal lead agencies are issuing this general conformity determination for public and agency review for a 45-day period as required by 40 CFR §§93.155 and 93.156. Emissions from construction and O&M of Alternative 4/4A have been assessed and quantified using standard and accepted tools, techniques, and emission factors. Additional technical details are provided in the partially recirculated Draft EIS/EIR. The air quality analysis, including this draft conformity determination, is based on consultation with YSAQMD, SMAQMD, BAAQMD, and SJAPCD.

22E.13.1 General Conformity Determination

The general conformity determination will be available for a 45-day public review in conjunction with the partially recirculated Draft EIS/EIR. The Federal lead agencies will provide copies of this general conformity determination to the appropriate regional offices of the EPA, ARB, YSAQMD, SMAQMD, BAAQMD, SJVAPCD, and other coordinating agencies consistent with general conformity public noticing requirements. The Federal lead agencies will also announce the availability of the general conformity determination in conjunction with the public noticing of the Final EIS and NEPA.

Record of Decision. Such notice will be published, at a minimum, in the Federal Register. A copy of this conformity determination will be made available on Reclamation's, USFWS', and NMFS' websites, as well as at local libraries.

22E.13.2 Revaluation and Redetermination of General Conformity

General conformity determinations are valid for a period of 5 years after the date of public notification for the final documentation (40 CFR §93.157(a)). Ongoing federal activities at a given site that show continuous progress after a 5-year period do not require a redetermination so long as the activities are within the scope of the final conformity determination.

22E.14 Findings and Conclusions

Pursuant to 40 CFR Part 93 Subpart B, the Federal lead agencies have conducted a general conformity evaluation as part of the environmental review of the BDCP. The project is subject to the general conformity rule because it is located in an area that is designated nonattainment for the 8-hour ozone and PM_{2.5} standards and a partial maintenance area for the CO and PM₁₀ standards. The Federal agencies conducted the general conformity evaluation in consultation with air districts in the Plan Area (YSAQMD, SMAQMD, BAAQMD, and SJVAPCD). The emissions analyses are based on accepted standards and are in compliance with all applicable regulatory criteria and procedures.

Based on project-specific construction analysis, NO_x emissions generated by the APA in the SJVAB and SFBAAB would exceed the federal *de minimis* threshold between 2019 and 2027 and 2024 and 2025, respectively. Construction-related ROG and NO_x emissions in the SJVAB would exceed the federal *de minimis* threshold between 2020 and 2025 and 2018 and 2028, respectively. The Federal agencies concluded that construction emissions would not result in a net increase in regional ROG (SJVAB only) or NO_x emissions, as construction-related ROG (SJVAB only) and NO_x emissions would be fully offset to zero through implementation of Mitigation Measures AQ-1a, AQ-1b, AQ-3a, AQ-3b, AQ-4a, and AQ-4b, which require the payment of offsite mitigation fees. Accordingly, the Federal lead agencies have determined that the APA, as designed, will conform to the approved SIPs, based on the findings below.

- A commitment from the BDCP Proponents that ROG (SJVAB only) and NO_x emissions generated by the APA will be offset consistent with the applicable federal regulations through development of a mitigation contract with Plan Area air districts or through the development of an alternative offsite mitigation program managed by DWR. The following actions will be taken to execute the conformity determination contained herein under an air district sponsored offset program:
 - BDCP Proponents will enter into a contractual agreement with SMAQMD and BAAQMD to mitigate NO_x emissions in excess of the federal *de minimis* threshold to net zero.
 - BDCP Proponents will enter into a contractual agreement with SJVAPCD to mitigate ROG and NO_x emissions in excess of the federal *de minimis* threshold to net zero.
 - BDCP Proponents will surrender moneys to the following air district approved incentive programs to fund grants for projects that achieve the necessary emission reductions.
- SMAQMD's HDLEVIP

- BAAQMD's Carl Moyer Program and TFCA

- SJVAPCD's Incentive Programs

- SMAQMD, BAAQMD, and SJVAPCD will seek and implement the necessary emission reduction measures, using BDCP Proponent funds.

- SMAQMD, BAAQMD, and SJVAPCD will serve in the role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

The following actions will be taken to execute the conformity determination contained herein under a DWR-sponsored offset program:

- DWR will develop an offsite mitigation program to fund emission reduction projects through grants and similar mechanisms.

- DWR will develop pollutant-specific formulas to monetize, calculate, and achieve emissions reductions in a cost-effective manner.

- DWR will conduct annual reporting to verify and document that emissions reductions projects achieve a 1:1 reduction with construction emissions to ensure claimed offsets meet the required performance standard.

- DWR will serve in the role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

Therefore, the federal lead agencies herewith conclude that the APA, as designed, conforms to the purpose of the approved SIP and is consistent with all applicable requirements.

22E.15 References

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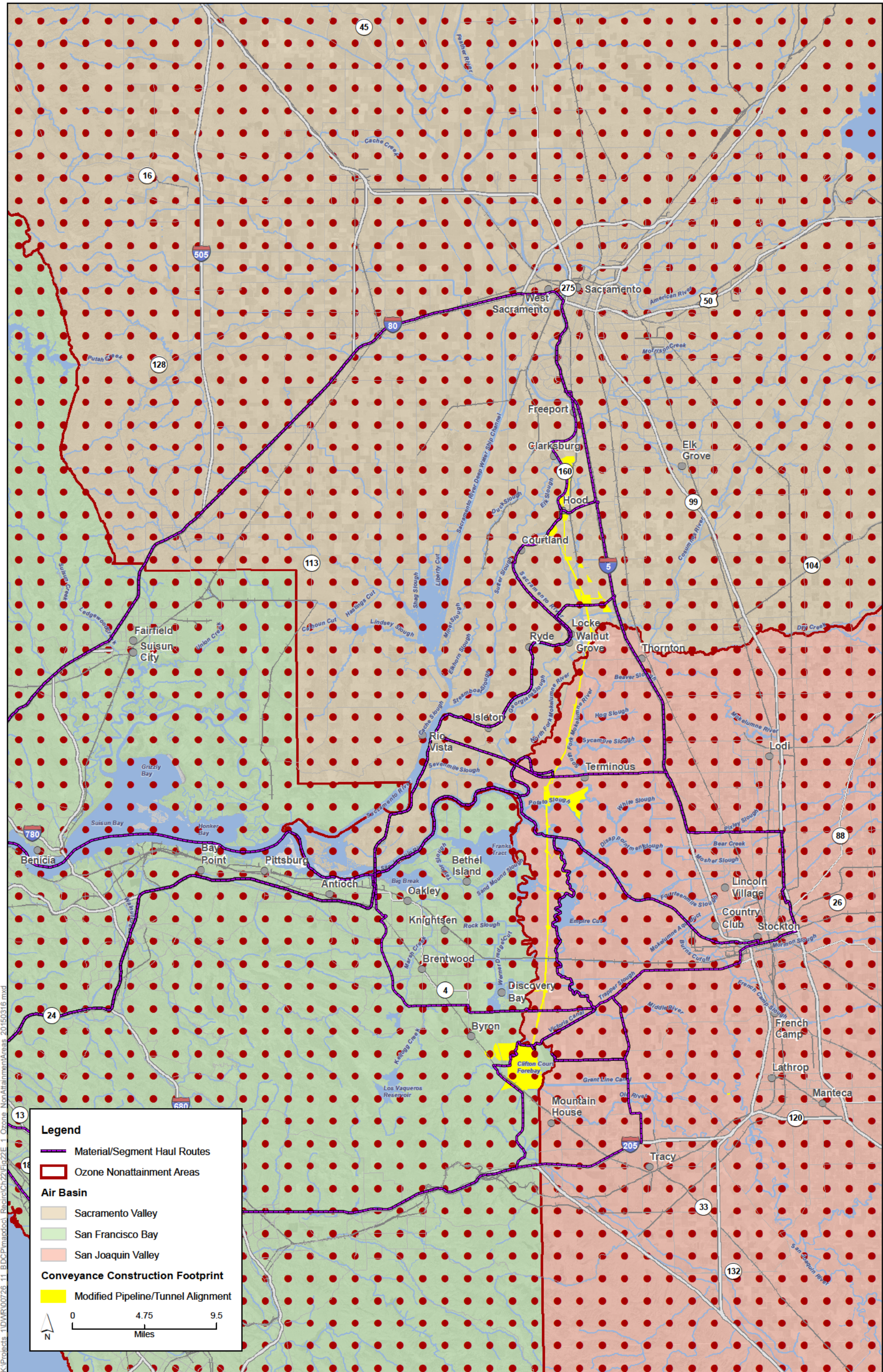
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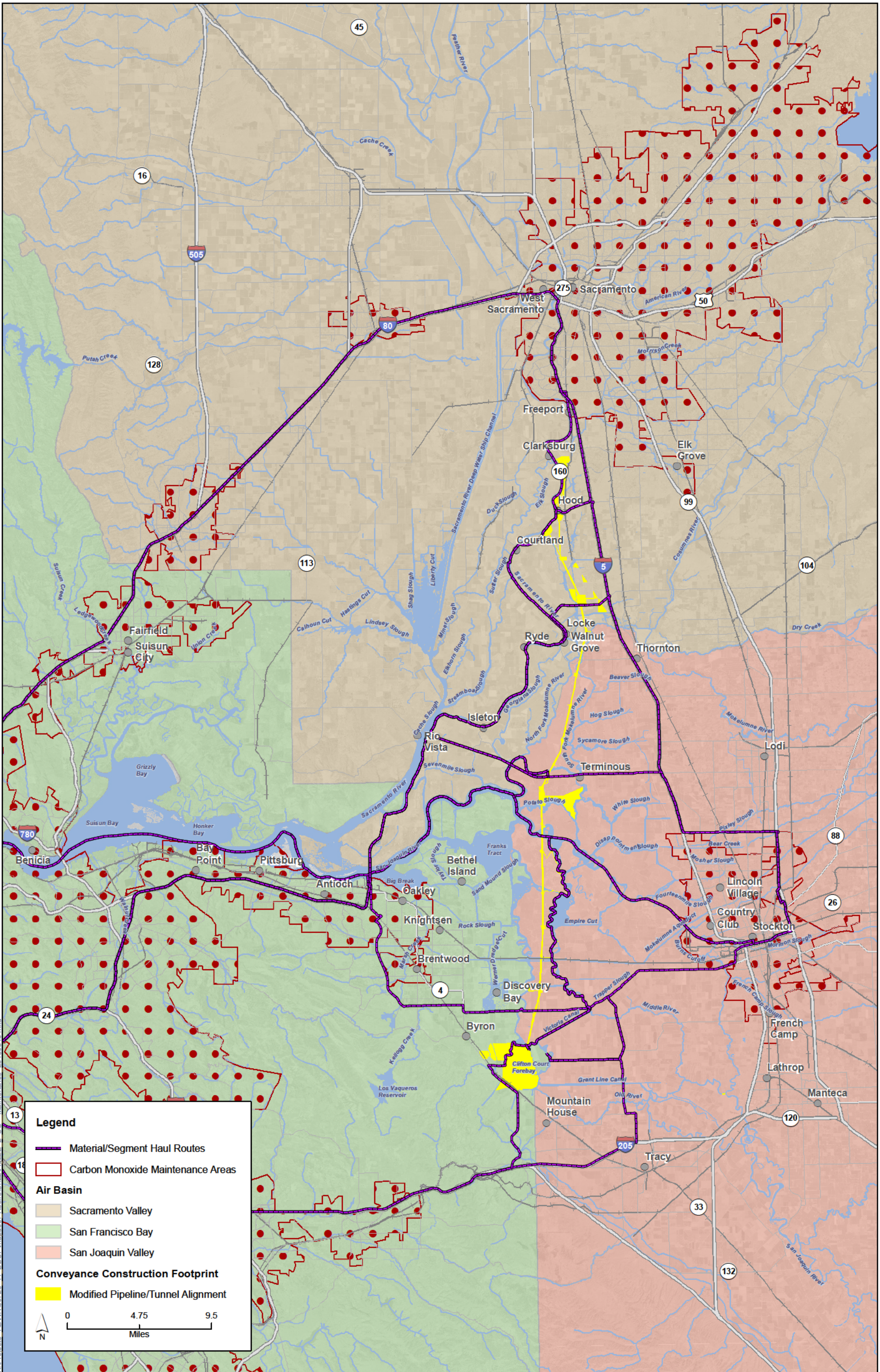
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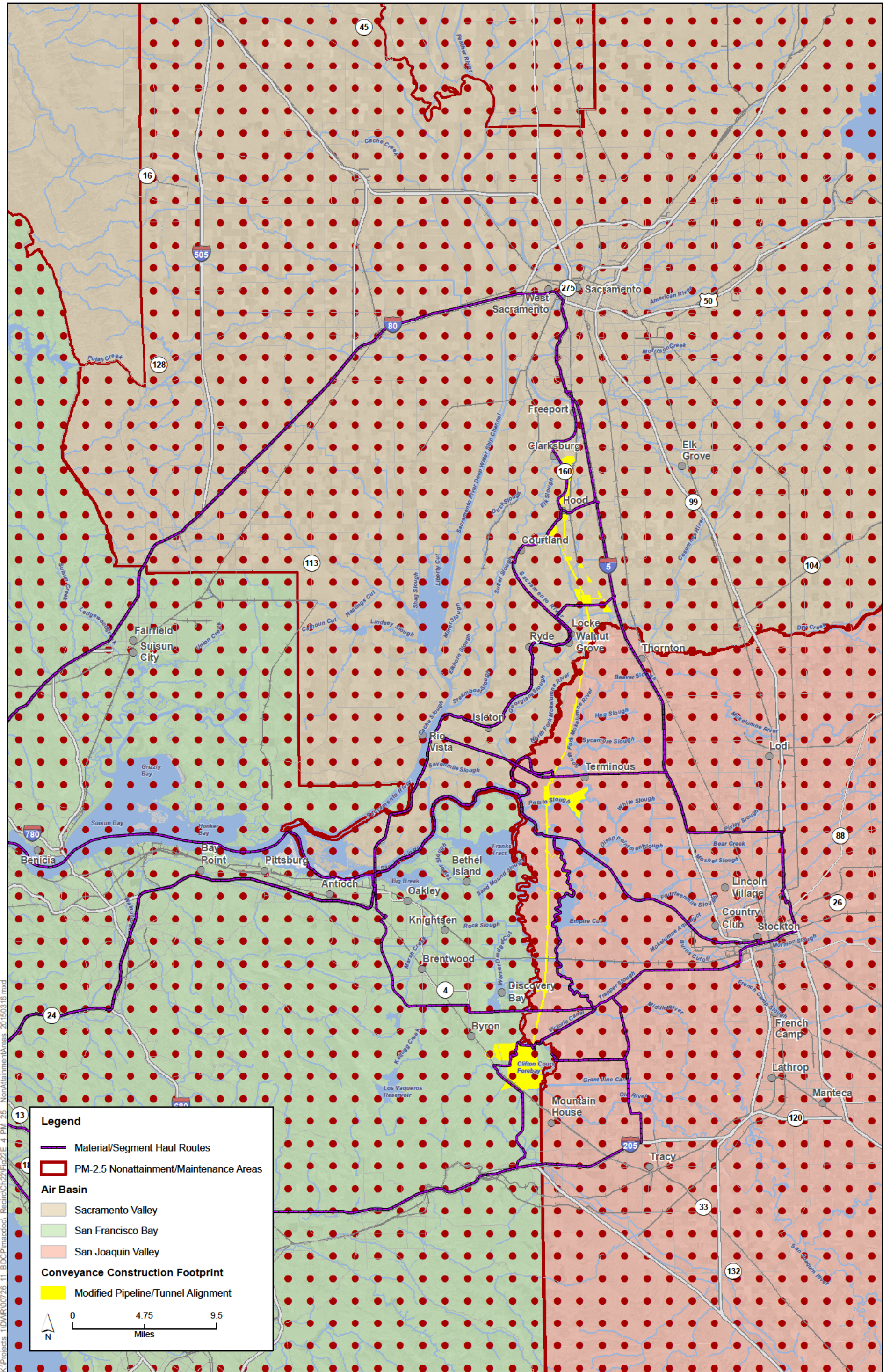
Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; ROA, SAIC 2010; Nonattainment/Maintenance Areas, EPA 2013; Air Basins, CARB 2004; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Constructability (Rev 4b), DHCCP DWR 2014

Figure 22E-1
Ozone Nonattainment Areas



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; ROA, SAIC 2010; Nonattainment/Maintenance Areas, EPA 2013; Air Basins, CARB 2004; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Constructability (Rev 4b), DHCCP DWR 2014

Figure 22E-2
Carbon Monoxide Maintenance Areas



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; ROA, SAIC 2010; Nonattainment/Maintenance Areas, EPA 2013; Air Basins, CARB 2004; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Constructability (Rev 4b), DHCCP DWR 2014

Figure 22E-4
PM - 2.5 Nonattainment and Maintenance Areas

1

Attachment 22E-1

2

Air District Coordination Letters

From: [Alison Kirk](#)
To: [Heiland, Brian@DWR](mailto:Heiland_Brian@DWR)
Cc: [Yoon, Laura](#); [Hatcher, Shannon](#); [David Vintze](#); [William Guy](#); [Anthony Fournier](#); [Henry Hilken](#); [CHARLENE McGHEE](#); [LARRY ROBINSON](#)
Subject: Bay Delta Conservation Plan construction emissions in the San Francisco Bay Area Air Basin
Date: Thursday, April 02, 2015 9:02:53 AM

Dear B.G.,

The purpose of this email is to confirm with the Department of Water Resources (DWR) the Bay Area Air Quality Management District's (Air District) intention to work with DWR to mitigate the construction related air quality impacts in the San Francisco Bay Area Air Basin associated with the Bay Delta Conservation Plan (BDCP). According to the analysis in the draft environmental impact report (DEIR), implementation of the BDCP will exceed the air quality significance thresholds for approximately 7 years of construction activity, and will exceed the federal general conformity de minimis thresholds in one of those years. In the San Francisco Bay Area Air Basin the general conformity de minimis threshold is 100 tons per year for the following pollutants: reactive organic gases (ROG), oxides of nitrogen (NOx), carbon monoxide (CO), particulate matter 2.5 (PM2.5), and sulfur dioxide (SO2). Based on the most recent BDCP project emissions estimate provided by DWR, construction emissions associated with preferred Alternative 4 exceeds this de minimis threshold for NOx emissions in years 2024 and 2025.

DWR has proposed mitigating the BDCP air quality impacts through an offsite mitigation program administered by the Air District to reduce all emissions above the CEQA thresholds and the general conformity de minimis threshold in the Bay Area. DWR would provide the funding necessary for the Air District to provide incentives for emission reduction projects that are not required by law to reduce their emissions, thereby offsetting the BDCP construction emissions. The Air District has implemented this type of incentive program for approximately the past 20 years.

DWR and the Air District would need to develop a memorandum of understanding establishing the methodology and process for the offsetting of the BDCP construction emissions, such as the cost per ton of emissions to be reduced, the timing of the payments and the administrative costs to the Air District. The Air District is confident that the amount of emission reductions needed by the project can be achieved and endeavors to work with DWR to offset the BDCP significant air quality impacts.

We look forward to working with the DWR to improve air quality in the Air District.

Please contact me with any questions.

Sincerely,

Alison Kirk, AICP
Senior Environmental Planner
Bay Area Air Quality Management District

COPY

Cassandra Enos-Nobriga
Department of Water Resources
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 94236-0001

Subject: Availability of Emission Reductions for the Proposed Voluntary Emission Reduction Agreement for the Bay Delta Conservation Plan

Dear Ms. Enos-Nobriga:

The San Joaquin Valley Air Pollution Control District (District) has received your correspondence seeking confirmation from the District whether emissions reductions needed for each of the water conveyance facility alternatives can be achieved through a Voluntary Emissions Reduction Agreement (VERA) with the District as outlined under Mitigation Measure AQ-4 of the Draft Environmental Impact Report/Statement (EIR/EIS) for the Bay Delta Conservation Plan project (Project).

Based on currently estimated construction emissions and reasonably foreseeable emission reduction projects in the San Joaquin Valley Air Basin, the District is confirming that it anticipates sufficient quantities of emissions reductions to be available to mitigate each of the water conveyance facility alternatives, as outlined under Mitigation Measure AQ-4.

Furthermore, since 2005, the District has been developing and implementing VERAs with project proponents to mitigate air quality impacts of their projects through its highly successful incentive programs. The District has entered into 26 VERAs, received over \$13.5 million, and achieved total emission reductions of over 1,530 tons of Nitrogen Oxides (NO_x), 185 tons Volatile Organic Compounds (VOC), and 113 tons of Particulate Matter 10 microns or less in size (PM₁₀).

Over the years, the District has built a reputation for excellence in the implementation of these programs, as highlighted in multiple audits by state agencies that lauded the District's incentive programs for their efficiency and effectiveness. The District's incentive programs have invested over \$1 billion in public and private funding for clean air projects reducing more than 100,000 tons of emissions.

COPY

The District appreciates your efforts to mitigate the air quality impacts of the Project through a VERA and the ongoing discussions, and looks forward to developing a VERA to reduce construction emissions and avoid adverse effects to the regional and local air quality.

If you have any questions, please contact Patia Siong.

Sincerely,

Arnaud Marjollet
Director of Permits Services

Chay Thao
Program Manager

AM: ps

cc: Laura Yoon, ICF International